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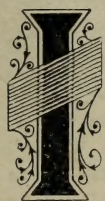
THE BUSY MAN'S MAGAZINE

THE CREAM OF THE WORLD'S MAGAZINES
REPRODUCED FOR BUSY PEOPLE.

Vol. XII. No. 1

MAY, 1906

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I f a man can write a
better book, preach a
better sermon, or
make a better mouse-
trap than his neigh-
bor, though he build
his house in the
woods, the world will
make a beaten path
to his door. ❀ ❀ ❀

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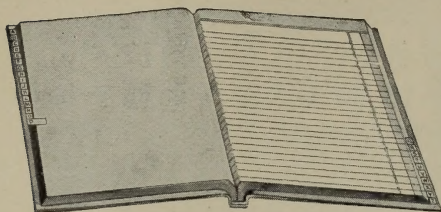
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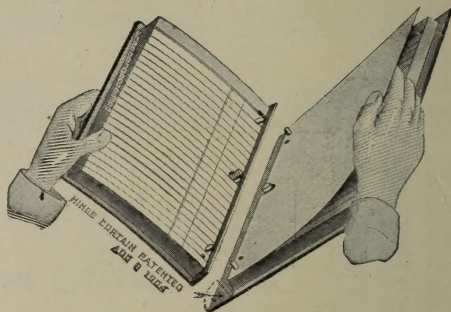
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THE BUSY MAN'S MAGAZINE

(Formerly "Business" and "The Business Magazine.")

Reproducing for Busy Men and Women the best
Articles from the Current Magazines of the World.

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Inside With the Publishers

BELIEVING that frequent changes in the outward appearance of a magazine betoken a stirring life within, we have again made a slight alteration in the cover design. In place of the portrait, which has been the central feature of the cover for the past three months, we have inserted a business maxim, which we believe our readers will appreciate, to the extent of keeping the cover constantly before them.

* * *

The Canadian Statesman, of Bowmanville, says: "We have never been quite as much interested in any magazine as we have been in the numbers of the Busy Man's Magazine that have come to hand. Every number so far has been a treasure—one that we would not like to have missed. It is very instructive and contains good counsel. No man or woman can read this splendid monthly without great profit."

* * *

George H. Peters, of Digby, N.S., commends the magazine because "it meets my idea of a magazine for one who does not have a great deal of spare time to devote to reading."

On all hands words of praise are heard and we have yet to learn of any person who finds fault. This is

not to be wondered at, when we consider the breadth and variety of the contents of The Busy Man's Magazine.

* * *

Hamiltonians always seem to have a kind word for the magazine. The proprietors of the Hilda Cigar Factory write under recent date: "We are reading your magazine regularly and must say that the articles in the magazine are compiled beautifully. The magazine should be in the house of every business man."

* * *

When one pauses to consider the number of different people, whose tastes are catered to in The Busy Man's Magazine, the enumeration passes belief. There were thirty-one articles in the April number. While each article appealed on its own merits to a very large circle of readers, yet each article was intended primarily for a certain class of busy people. The insurance man, the politician, the manufacturer, the member of Parliament, the philanthropist, the tourist, the business woman, the farmer, the railroad man, and a host of other workers, all had their own interesting article prepared for their delectation. It is this universality which makes The Busy Man's Magazine liked wherever it goes.

There is a jewel which no
Indian mine can buy,
No chemic art can counter-
feit;
It makes men rich in great-
est poverty,
Makes water wine, turns
wooden cups to gold,
The homely whistle to sweet
music's strain;
Seldom it comes — to few
from heaven sent—
That much in little—all in
nought—content.

—Wilbye. "Madrigal."

THE BUSY MAN'S MAGAZINE

Vol. XII.

MAY, 1906.

No. 7

From Grocer's Apprentice to Senator

BY WALTER S. B. ARMSTRONG

The career of Hon. Robert Jaffray of Toronto, is one of solid progress. There has been nothing meteoric about his advancement. Beginning at the lowest rung of the ladder, he has climbed step by step to that position of affluence and honor which he now occupies.

HON. ROBERT JAFFRAY, who was created a Senator last March, was of Scotch farmer stock, and began life for himself as a grocer's apprentice. It is a far cry from the Edinburgh grocery of J. R. Dymock to the Red Chamber at Ottawa; it is 60 years less one from the raw country lad and new apprentice of fifteen, just from school, to the tall, broad shouldered, athletic-looking old gentleman, financier, director of many companies, trusted counsellor of political leaders and captains of industry, now taking his seat in the Dominion Senate. How did he do it?

Unless there is no truth in the old adage, "The boy is father of the man," Mr. Dymock found his new apprentice absolutely trustworthy, generous, unobtrusive in manner, wonderfully industrious, energetic and self-reliant in a marked degree. Latent then, but rapidly developed, was a keen, shrewd business acumen, combined with a farsightedness often remarkable.

It is not surprising that such a

lad, having served his apprenticeship of five years and grown to a young man of twenty, should respond to the call of the new world. He arrived in Toronto in 1852. There were 30,000 people in the then capital of Upper Canada, and the most northerly store on Yonge street was where what is now the corner of Louisa street, and it was kept by his brother-in-law, J. B. Smith. It was a grocery and provision store, and Mr. Smith, having other interests, placed his brother-in-law in charge of it. The young Scotchman found the business in an unsatisfactory financial position, but there was no daunting him. He was self-reliant and he obeyed the eleventh commandment, "Don't worry."

It is said of him at this time that he would go home at night with heavy obligations to meet on the morrow, and little in sight with which to liquidate; sleep soundly and come down in the morning as cheery as a lark to grapple with his difficulties. Well, in five years he was a partner, and the year follow-

ing Mr. Smith decided to give his whole time to his other interests, and Mr. Jaffray took over the entire business. That was in 1858.

"I knew him well in those days," recently remarked the general manager of one of Toronto's banks. "I can see him now running down in his shirtsleeves to our bank to make his deposits; and his deposits were not very large in those days either."

The city grew past Louisa street. The business grew apace and developed a wholesale department. That was before the railways had diverted traffic from Yonge street and the hundreds of farmers who teamed to Toronto dealt at the Yonge street store. A dozen men were employed and a manager.

Gradually Mr. Jaffray relieved himself of the details of management and left himself time for other interests which his increasing means invited. He became one of the organizers of the Land Security Company, and as associate with him in that company was Hon. Alexander Macenzie.

It is time to mention politics. Like most Scotchmen in Canada, Mr. Jaffray was by profession and profound conviction a Liberal; his indomitable energy had made him a worker, and having large capacity for organization he attained gratifying results. His capacity for organization, his sound judgment, clearheadedness and breadth of view had made him a leader in the councils of his party. When Mr. Macenzie became Premier in 1874, and was looking about for some one to represent the Government on the directorate of the Northern Railway, what more natural than that he should hit upon his friend Jaffray, whose business capacity and industry he knew. Parliament had made

large advances to the railway and things were not looking too well. The Premier's choice could not have been bettered. Through the representations of Mr. Jaffray the Government instituted an inquiry into the affairs of the railway that resulted very beneficially, and largely because of Mr. Jaffray's efforts the indebtedness to the country was eventually paid.

His attainments in the realm of finance are due in a part at least to his association with Hon. Geo. A. Cox. In good or evil ways one thing leads to another. It was not luck that brought Geo. A. Cox and Robert Jaffray together in the management of the Midland Railway, then a small affair from Port Hope to Peterboro with a branch to Lindsay.

Sometime before this, how long it doesn't matter, Hon. George Brown had said to a friend and business associate whom he knew to be a friend of Mr. Jaffray, "Why don't you bring your friend Jaffray down? I would like to meet him." The request was complied with and the two Scots became and remained intimate friends. The Philadelphia Centennial brought to America a Scotch gentleman prominent at least in his own town. Having a friend in Toronto he came on to Canada to see him, and a few leading Caledonians were got together to dine with him, among them Hon. George Brown and Mr. Jaffray. It came out in the course of conversation that Mr. Lyle, that was the visitor's name, had invested £6,000 in the bonds of the Midland Railway, and was much disappointed because it had never paid interest and there didn't appear much chance of saving the principal.

"A good property, but badly managed," declared Mr. Brown. "Why don't you get a good man on the

board to look after your interests there? Jaffray, there, is the kind of man you want."

Mr. Lyle wouldn't even go and look at the road, but the suggestion was not lost, for a year after a letter came from him stating that he and other bondholders were prepared to place to the credit of Mr. Jaffray and any one else he would select sufficient interest in the road to make them directors. Mr. Jaffray consented to undertake the task and decided his associate should be a Peterboro man. He did not know any one at Peterboro, but he knew others who did. Mr. Cox was selected and within a day or two the matter was arranged. When they took hold they found many of the employes unpaid and things in rotten shape. Within a year the bonds that had been worth nothing were quoted at 50 per cent. of their face value, and the Scotch holders offered to sell out at that to their two Canadian trustees. Messrs. Jaffray and Cox said "No, we'll do better than that," and they did. Finally the road was absorbed by the Grand Trunk under a 99 years lease.

The association of business interests between Messrs. Cox and Jaffray then established has been continued and has meant much to both of them. Probably there are not in Canada to-day two men of sounder judgment, keener business acumen or more industrious.

Of business and finance it only need be added that Mr. Jaffray is, since last month, vice-president of the Imperial Bank, after thirty years on the directorate; vice-president of the Crow's Nest Pass Coal Co., director of the Toronto General Trusts Corporation, of the Canadian Gen-

eral Electric Co., and president of the Globe Co.

It is only as president of the Globe that Mr. Jaffray has become widely known. He was never much of a public speaker and so his political work was not of a kind to bring him before the footlights. He came upon the Globe directorate in 1880, and eight years later succeeded in the presidency Mr. James MacLennan, K.C., who had been transferred to the bench. It became his chief ambition to see the Globe a great newspaper, and in pursuance of that ambition Mr. Jaffray has probably rendered his greatest service to the public of Canada. It was not as a great party paper that he was ambitious for the Globe. He wanted it a newspaper eminently fair and absolutely reliable so far as its news columns were concerned. The fair conduct of a great newspaper is worth more to a country, and especially a young country, than many industries. Mr. Jaffray pursued his ambition with infinite patience and determination. For years the financial position of the company was precarious and the directors have had to give their personal security to the bank for large sums. Globe's stock could be bought for 15c. on the dollar. Now it is above par, and difficult to get at any price. But it was not for money he labored.

Every intimate friend of Senator Jaffray will tell you of his untiring industry, his kindness of heart and his business foresight. If he promises a chap to try and get him a position he doesn't just write a letter, or perhaps forget it. If he gives a promise he has it on his conscience and he hustles to find a place. His energy and goodheartedness are both illustrated in the story of Crow's Nest Coal. Practically

worthless stock of the Crow's Nest Coal Co. was kicking about and Mr. Jaffray undertook to investigate the proposition. He traveled 200 miles through the mountains and went over the coal areas at a tremendous expenditure of exertion. Then when he and other capitalists took it up and the stock began to advance, a widow whose husband had left her nothing but a large block of it wanted to dispose of it. Mr. Jaffray persuaded her not to, and it finally returned her a handsome competence.

Mr. Jaffray had always great faith in Toronto's future. In the 70's he said to a friend who was going to sell property on Yonge street, just north of Bloor, "I wouldn't sell for three times what you paid for it. It will be the centre of a business district some day." The "some day" has come, though there was nothing then to indicate it to the other man, a shrewd Scot like himself. Some years ago Mr. Jaffray foresaw that ultimately certain blocks of Yonge street property would bring large values, and he became heavily committed. The bad times delayed the fulfillment of his expectations, and for a while the property was a grievous burden, but the last year or

two have more than justified his judgment.

Aside from business and the Globe, Mr. Jaffray has few interests. Some years ago he gave some attention to theological and philosophical problems as recreation, and a sort of club comprising the best known university leaders and others used to meet at his home for the discussion of such questions. He was chairman under the late Liberal Government in Ontario of the Temiscaming Railway and is now a member of the Queen Victoria Park Commission. He is an expert checker player and likes the game.

Mr. Jaffray's home relations have been sacredly beautiful and tender, and a great sorrow is now resting upon him in the recent death of Mrs. Jaffray, a woman of deep piety and saintly living. There are four children, two daughters, both married, and two sons, one a stock broker the other a missionary in Africa.

To approach an adequate appreciation of this man's sterling worth, large business ability and kindly nature, the stranger need talk with the friends who have known him longest and enter into enthusiasm of their panegyrics.

Making Good

This world was not constructed for the lazy man of dreams ;
One flash is not a nugget—gold is constant with its gleams ;
The world keeps looking higher than the level you've attained,
And thinks you retrograding till 'tis certain you have gained.

No stand still will it tolerate ; slide back, and you will see
Your name among the "has-beens" as a harmless "used-to-be."
The standard you established when you did the best you could
Was but you're affidavit that you'd keep on making good.

—Success Magazine.

Cobalt and its Undreamt-of Wealth

BY WALLACE MACLEAN.

Cobalt is a name to conjure with to-day, just as Klondike was some years ago. The rich silver mines of New Ontario, are yielding undreamt-of stores of wealth. This year there will be an influx of prospectors estimated well up in the hundreds of thousands. That the Cobalt mines will prove to be the richest in the world, seems quite probable.

LESS than three years ago what is now known as Cobalt was as wild and desolate a place as can well be imagined—a land of steep, rocky elevations and depressions with a covering of soil sufficiently deep to support a dense growth of pine, cedar, poplar, birch and other trees. This little bit of wilderness of Northern Ontario, situated by rail exactly 330 miles north of Toronto, now enjoys a world-wide notoriety. It lays claim to the possession of mines that produce the richest silver-bearing ore the world has ever known. The claim is not, remember, that the mines are the richest silver mines in the world, but that the ore found at Cobalt is the richest silver ore that has yet been obtained anywhere in the world. I think this latter claim can safely be made. This is the statement of Dr. Bell of the Dominion Geological Survey, of Professor Miller, and of all the experts who have visited the Camp. I have met dozens of miners from all parts of the world at Cobalt and they are unanimous in their statement that Cobalt's ores are the richest known, that Cobalt in fact is a new proposition in the mining world.

Whether or not Cobalt will turn out to be the richest silver camp in the world remains to be seen. Some believe it will so turn out. No one of course can say positively either way. Judging from the lavish way huge nuggets and slabs of silver have been scattered over the surface of the earth at Cobalt one would conclude

that there must be a great storehouse of the precious metal in the immediate vicinity. That there is such a storehouse is generally admitted and that it must be below the earth is also admitted. So far the lowest depth reached is in the neighborhood of 300 feet, but of this the lower 200 feet was made by a diamond drill. This depth has been reached on the property of the Larose Mining Co. and the proprietors report that as depth is reached the ore bodies increase in quantity and richness. It will take several years to ascertain what the rocks of Cobalt really contain. Up to date the diagnosis is most favorable and it is firmly believed that Cobalt will not only prove its claim to possessing the richest silver ore in the world, but also to possessing the greatest and richest silver mines in the world. In five years we may have more knowledge on this aspect of the case.

Cobalt possesses other unique features as a mining camp. Its mines are the richest cobalt mines in the world. This claim is not questioned. The production of cobalt in this camp has already had the effect of bringing down the price of that metal from \$2.50 to 60 cents a pound. The cobalt producers of Saxony and Bohemia have taken alarm at the output of our mines and they have become even more interested in Cobalt than have Canadians themselves. It looks as if they would be put out of business, as far, at least, as the production of cobalt is concerned.

Still another distinction that Cobalt claims is the extraordinary blending of metals in its characteristic ores. These metals consist principally of silver, cobalt, nickel and arsenic. An average sample of cobalt ore will contain from 60 to 75 per cent., by weight of these metals: 7 per cent. of silver, 9 of nickel, 9 of cobalt and 50 per cent of arsenic. There are only two other places in the world where any such rich combination of metals is found. These places are Saxony and Bohemia, whose mines have been in operation continually since the discovery of America over 400 years ago. While the German mines contain the same metals as those of Cobalt, the ores are by no means as rich as ours, either in silver, cobalt or nickel.

Possessing as it does these unique features, it is not surprising that Cobalt's reputation has spread far and wide. There is sure to be a great rush to the camp this year. The movement has already begun and railway authorities have estimated that anywhere up to 250,000 people may find their way to the Cobalt country this season. The decision of the Government to withhold from the public the territory within the Gillies timber limits and to develop the mines as Government property, may deter quite a number from going to Cobalt, but still it is expected the rush northwards will assume large proportions and that the Town of Cobalt will be taxed to the utmost to provide accommodation for the visitors.

Cobalt is indeed becoming a subject of absorbing interest to Canadians, and especially to the people of Ontario. It is said by men who ought to know whereof they speak, that the revenue from the mines in the Gillies' timber limit will be suffi-

cient to defray all the expenses of governing the province. This is the opinion of Mr. W. K. McNaught, M. P.P., for instance, who stated publicly the other night that the value of the mines in the limits might safely be placed at 100 million dollars. In addition to these mines the Government owns the mineral rights along the railway right of way, and these have been advertised for sale. The operation of the mines by the Government as a source of revenue for the conduct of the public business makes Cobalt a uniquely interesting proposition.

Columns and columns have been written in the press about Cobalt, but we must turn to the official reports to obtain the exact truth about the camp as it stands to-day. According to a memorandum recently published by the Bureau of Mines, there were shipped in 1905, 2,144 tons of ore yielding to the shippers \$1,468,524 net. The silver produced was 2,441,421 ounces valued at \$1,355,306.

The nickel amounted to 75 tons valued at \$10,525. The cobalt production was 118 tons valued at \$100,000. The arsenic accounted for was 549 tons, and the sum realized thereon was \$2,693. On a large proportion of the shipments no value at all was received for the nickel, cobalt and arsenic. These are the aggregate returns from the seventeen mines which had reached the shipping stage previous to December last year. During 1905 the camp was laboring under not a few disadvantages and it is necessary to take these into consideration in making an estimate of the present possibilities of the camp. In the first place it must be borne in mind that in 1905 the camp was practically without machinery. It was only in

November last that the Trethewey mine, for instance, installed a compressor plant. This is a mine which has already netted \$400,000 for its proprietors. Some of the silver from this has been exchanged for a valuable office block in Toronto street and a fine new residence in Rosedale.

The Larose mine was equipped with a plant during the whole of the year and there was a steam plant at the Nipissing Co's mines, but at all the other mines the drilling was done by hand and the hoisting by men and horses.

Another thing that must be borne in mind in forming an estimate of the camp is the fact that the mining in 1905 was carried on by inexpert workmen. I have in mind one of the properties owned by people in New Liskeard, which was managed by a board of thirteen directors not one of whom had any practical experience whatever in mining. One of them was a good sawmill man, another was a reputable horse doctor, while a third preached a fairly good sermon on Sundays. The actual development of the mine was left to a man to whom \$20 a week was big wages. The men working under him were farm hands, lumbermen and unskilled laborers. Several of the other mines were managed in the same unbusinesslike way. During 1905 Cobalt was practically in the hands of farmers.

Litigation is another factor that retarded production in Cobalt last year. Several of the mines were tied up absolutely while impending litigation paralyzed a big portion of the camp. We must also bear in mind that a majority of the 17 shipping mines of 1905 did not become productive until after July. Several of them were not discovered till May, June and later months.

Finally we must include in the list of unfavorable conditions to which Cobalt was subjected in 1905, the fact that the ore produced could not be sold to advantage. The characteristic ore of Cobalt is highly refractory and difficult to reduce. As a matter of fact, no smelter in America was prepared to treat it advantageously and the ore consequently had to be sacrificed to obtain a market. At some of the mines the ore was stored away awaiting the discovery of an improved reduction process.

Taking all these circumstances into consideration the production of Cobalt for 1905 is a fact full of significance. The actual product of the camp is a fact of itself sufficient to justify one in forming a somewhat optimistic opinion of Cobalt's future.

That the camp will remain productive for many years to come, there is no doubt at all. Dr. Bell visited Cobalt in the Fall of 1905 and in an interview with me, published in the *Globe*, he said "he had no hesitation in saying that the ores found at Cobalt were the richest of their kind in the world, and he was impressed with the large number of veins and the great variety of metals contained in the ore bodies. Cobalt, in his opinion, is a new proposition in the mining world. He thinks there will be a good healthy camp at Cobalt for years to come."

Dr. Bell's theory is borne out by the results obtained by the working of the Government's diamond drill in the Larose Mining Co's property. The drill was set to work at the bottom of a 90-foot shaft. It reached a depth of 200 feet and was then taken away, the company having satisfied itself that the veins continued to that depth at least. In September

last M. Albert de Romen and M. Adolphe Chalas, of Paris, visited the camp on behalf of the French Government. They gave it as their opinion "that even if the veins should not extend to a great depth (although there was no evidence they would not) there was a large number of them in the proven territory and they would not be exhausted for a long time. Mining would go on in Cobalt for many years."

Perhaps the strongest evidence of the permanency of the camp is found in the decision of the mine owners to invest capital in the construction of a smelter. The building of a smelting plant requires a large capital and no one would undertake the risk of such a venture unless he was assured of sufficient ore to keep the plant in operation for several years. The mine owners at Cobalt have formed a joint stock company for the purpose of erecting a smelter. The plant of the Hoeffner refinery works at Hamilton has been acquired and an expert has been engaged to make such changes in it as will be necessary for the treatment of the Cobalt ores. The starting of this works will give a great impetus to the production of ore at Cobalt.

For all these reasons it is safe to say that Cobalt is not a flash in the pan, but has all the ear marks of a healthy, permanent mining camp.

Having established the richness and permanency of the camp, the next feature of interest is the extent of the productive area. This area is at present confined to Coleman Township and to but a limited section of that township. The sketch map of the Bureau of Mines "showing location of veins in Coleman" covers an area of two miles from east to west by two and a half miles from north to south, in all five square

miles of territory or 3,200 acres including three small lakes. During 1906 a great deal of prospecting will be done north and south of Coleman Township. Speaking of this outside territory, Prof. Miller says: "Cobalt bloom and related minerals have been found 30 miles north of Cobalt station in the northern part of the Township of Ingram and adjacent territory. Similar minerals have been found 15 or 20 miles to the south and southwest. The productive area is, however, confined to within about two miles of Cobalt station. Recently ores similar to those of Cobalt, but containing gold instead of silver, have been found in small quantities at Rabbit Lake, 30 miles south of Cobalt." All this country will be overrun with prospectors this season. Everything in Coleman has been taken up and prospectors will be obliged to go further afield in search of the coveted treasure.

The ore occurs in narrow veins. The average width of the veins upon which work has been done is probably 10 or 12 inches. To give an idea of the wonderful richness of the veins I quote the following from the report of Prof. Miller: "An open cut, about 50 feet long and 25 feet deep, on the Trethewey vein, location J.B. 7, has produced approximately \$200,000 worth of ore, the maximum width of the vein being not more than 8 inches. The amount received for one carload of 30 tons of ore from this mine was between \$75,000 and \$80,000. A shipment of 50 tons of ore gave an analysis approximately the following percentages of metals: Arsenic, 38; cobalt, 12; nickel, 3.5, and 190,000 ounces of silver. Pay was received for silver and cobalt only." In another portion of his report Prof. Miller states that approximately \$1,000,000 worth of

ore has been blocked out on the first vein discovered on the Larose claim, known as JS14.

For the present, popular interest has shifted from the mines to the town of Cobalt. The "Silver City," as it has been called, is the Mecca to which thousands of people from all over the continent will journey this Spring and Summer. The town is now in the hands of speculators and boomsters who are getting things in shape to receive the crowds that are expected to pour in later on at the rate of a thousand or more a day. On the first of April there were about 1,500 people, all told, in Cobalt, exclusive of those in the mining camps, and foundations had been laid for 150 new buildings. Two new hotels, each to accommodate over 100 guests, are under construction and many of the projected buildings are large boarding houses. Real estate has risen rapidly in value in the business section. Property has changed hands at as high as \$200 per foot. Several lots have brought ten times what they originally cost in August last. Cobalt has a stock exchange, several pool rooms, bowling alleys and such like adjuncts to a mining town. The camp, as yet, is very crude and it is difficult to secure the ordinary conveniences of life. Accommodation at the principal hotel is quite limited and the price of a night's lodging, sometimes with two in a bed, is two dollars. Nothing has as yet been done to improve the sanitation of the town and it is feared an epidemic of typhoid may be one of the features of Cobalt this Summer. A municipal

council has been elected and one of its first duties will be the installation of a plant to bring water from Clear Lake, about half a mile distant from the town. Reeve Finlan expects to have this work accomplished within ninety days. In the meantime, Cobalt's water supply will be obtained from springs which must necessarily become polluted when the refuse and filth of the Winter, released from the frost, finds its way down the rocky hills to the lower levels.

The discovery of silver at Cobalt has, to a certain extent, upset the equilibrium of the whole country north of North Bay. The pioneers of New Ontario went into that country to develop its agricultural resources. Instead of becoming farmers they have turned miners, mining brokers and stock speculators. New Liskeard, which was once the most Arcadian settlement in Ontario, has become absolutely fast and giddy. A dozen joint stock companies have been formed and it is hard to find a resident who has not stock in at least half a dozen companies. The good luck of the Temiscaming & Hudson's Bay Co. has turned their heads. This company had a paid up capital of \$8,000, shares being \$1.00 each. Early in April last these one dollar shares were selling at \$65.00. The shares are all held by local people. The dozen companies above referred to were formed to duplicate what had been done by the Hudson Bay people. Up to date, however, they have not succeeded and the shares of these companies are somewhat of a drug on the market.

A Distant Relation

BY W. W. JACOBS IN THE COSMOPOLITAN.

No writer of the present day can excel W. W. Jacobs in his treatment of the humorous side of the life of the plain every day Britisher. In the present story, his droll fancy has conceived a rather novel situation, which he has worked out in a highly amusing manner.

M R. POTTER had just taken Ethel Spriggs into the kitchen to say good-by; in the small front room Mr. Spriggs, with his fingers already fumbling at the linen collar of ceremony, waited impatiently.

"They get longer and longer over their good-bys," he complained.

"It's only natural," said Mrs. Spriggs, looking up from a piece of fine sewing. "Don't you remember _____"

"No, I don't," said her husband, doggedly. "I know that your poor father never 'ad to put on a collar for me; and mind you I won't wear one after they're married, not if you all went on your bended knees and asked me to."

He composed his face as the door opened, and nodded good night to the rather over-dressed young man who came through the room with his daughter. The latter opened the front door, and passing out with Mr. Potter, held it slightly open. A penetrating draught played upon the exasperated Mr. Spriggs. He coughed loudly.

"Your father's got a cold," said Mr. Potter in a concerned voice.

"No, it's only too much smoking," said the girl. "He's smoking all day long."

The indignant Mr. Spriggs coughed again; but the young people had found a new subject of conversation. It ended some minutes later in a playful scuffle, during which the door acted the part of a ventilating fan.

"It's only for another fortnight," said Mrs. Spriggs hastily, as her husband rose.

"After they're spliced," said the vindictive Mr. Spriggs, resuming his seat, "I'll go round, and I'll play about their front door till——"

He broke off abruptly as his daughter, darting into the room, closed the door with a bang that nearly extinguished the lamp, and turned the key. Before her flushed and laughing face Mr. Spriggs held his peace.

"What's the matter?" she asked, eying him. "What are you looking like that for?"

"Too much draught—for your mother," said Mr. Spriggs, feebly. "I'm afraid of her asthma agin."

He fell to work on the collar once more and, escaping at last from the clutches of that enemy, laid it on the table and unlaced his boots. An attempt to remove his coat was promptly forestalled by his daughter.

"You'll get doing it when you come round to see us," she explained.

Mr. Spriggs sighed, and lighting a short clay pipe—forbidden in the presence of his future son-in-law—fell to watching mother and daughter as they gloated over dress materials and discussed double-widths.

"Anybody who can't be 'appy with her," he said half an hour later as his daughter slapped his head by way of bidding him good night, and retired, "don't deserve to be 'appy."

"I wish it was over," whispered his wife. "She'll break her heart if

anything happens, and—and Gussie will be out now in a day or two.”

“A gal can’t help what her uncle does,” said Mr. Spriggs, fiercely; “if Alfred throws her over for that he’s no man.”

“Pride is his great fault,” said his wife, mournfully.

“It’s no good taking up troubles afore they come,” observed Mr. Spriggs; “per’aps Gussie won’t come ’ere.”

“He’ll come straight here,” said his wife with conviction, “he’ll come straight here and try and make a fuss of me; same as he used to do when we was children and I’d got a ha-penny—I know him.”

“Cheer up, old gal,” said Mr. Spriggs, “if he does we must try and get rid of him, and if he won’t go we must tell Alfred that he’s been to Australia, same as we did Ethel.”

His wife smiled faintly.

“That’s the ticket,” continued Mr. Spriggs. “For one thing I b’leeve he’ll be ashamed to show his face here, but if he does, he’s come back from Australia. See? It’ll make it nicer for ’im too. You don’t suppose he wants to boast of where he’s been?”

“And suppose he comes while Alfred is here,” said his wife.

“Then I say ‘how ’ave you left ’em all in Australia?’ and wink at ’im,” said the ready Mr. Spriggs.

“And suppose you’re not here,” objected his wife.

“Then you say it and wink at ’im,” was the reply. “No, I know you can’t,” he added hastily, as Mrs. Spriggs raised another objection; “you’ve been too well brought up; still you can try.”

It was a slight comfort to Mrs. Spriggs that Mr. Augustus Price did, after all, choose a convenient

time for his reappearance. A faint knock sounded on the door two days afterward as she sat at tea with her husband, and an anxious face with somewhat furtive eyes was thrust in to the room.

“Emma!” said a mournful voice, as the upper part of the intruder’s body followed the face.

“Gussie!” said Mrs. Spriggs, rising in disorder.

Mr. Price drew his legs into the room, and closing the door with extraordinary care, passed the cuff of his coat across his eyes, and surveyed them tenderly.

“I’ve come home to die,” he said slowly, and, tottering across the room, embraced his sister with much unction.

“What are you going to die of?” inquired Mr. Spriggs, reluctantly accepting the extended hand.

“Broken ’art, George,” replied his brother-in-law, sinking into a chair.

Mr. Spriggs grunted and, moving his chair a little farther away, watched the intruder as his wife handed him a plate. A troubled glance from his wife reminded him of their arrangements for the occasion, and he cleared his throat several times in vain attempts to begin.

“I’m sorry that we can’t ask you to stay with us, Gussie, ’specially as you’re so ill,” he said at last, “but per’aps you’ll be better after picking a bit.”

Mr. Price, who was about to take a slice of bread-and-butter, refrained, and closing his eyes uttered a faint moan. “I shan’t last the night,” he muttered.

“That’s just it,” said Mr. Spriggs, eagerly, “you see, Ethel is going to be married in a fortnight, and if you died here that would put it off.”

“I might last longer if I was took

care of," said the other, opening his eyes.

"And besides, Ethel don't know where you've been," continued Mr. Spriggs. "We told 'er that you had gone to Australia. She's going to marry a very particular young chap, a grocer, and if he found out it might be orkard."

Mr. Price closed his eyes again, but the lids quivered.

"It took 'im some time to get over me being a bricklayer," pursued Mr. Spriggs. "What he'd say to you—"

"Tell 'im I've come back from Australia if you like," said Mr. Price, faintly. "I don't mind."

Mr. Spriggs cleared his throat again. "But you see we told Ethel as you was doing well out there," he said with an embarrassed laugh, "and girl-like, and Alfred talking a good deal about his relations, she—she's made the most of it."

"It don't matter," said the complaisant Mr. Price, "you say what you like; I shan't interfere with you."

"But you see you don't look as though you've been making money," said his sister impatiently. "Look at your clothes."

Mr. Price held up his hand. "That's easy got over," he remarked, "while I'm having a bit of tea, George can go out and buy me some new ones. You get what you think I should look richest in, George—a black tail coat would be best, I should think, but I leave it to you; a bit of a fancy waistcoat per'aps, lightish trousers and a pair o' nice boots—easy sevens."

He sat upright in his chair, and ignoring the look of consternation that passed between husband and wife, poured himself a cup of tea and

took a slice of cake.

"Have you got any money?" said Mr. Spriggs, after a long pause.

"I left it behind me—in Australia," said Mr. Price with ill-timed facetiousness.

"Getting better, ain't you?" said his brother-in-law sharply. "How's that broken 'art getting on?"

"It'll go all right under a fancy waistcoat," was the reply, "and while you're about it, George, you'd better get me a scarfpin, and, if you could run to a gold watch and chain —"

He was interrupted by a frenzied outburst from Mr. Spriggs, a somewhat incoherent summary of Mr. Price's past, coupled with unlawful and heathenish hopes for his future.

"You're wasting time," said Mr. Price calmly, as he paused for breath. "Don't get 'em if you don't want to. I'm trying to help you, that's all. I don't mind anybody knowing where I've been; I was innocent. If you will give way to sinful pride, you must pay for it."

Mr. Spriggs by a great effort regained his self-control. "Will you go away if I give you a quid?" he asked, quietly.

"No," said Mr. Price, with a placid smile. "I've got a better idea of the value of money than that. Besides, I want to see my dear niece, and see whether that young man's good enough for her."

"Two quid?" suggested his brother-in-law.

Mr. Price shook his head. "I couldn't do it," he said calmly; "in justice to myself I couldn't do it. You'll be feeling lonely when you lose Ethel, and I'll stay and keep you company."

The bricklayer nearly broke out again, but, obeying a glance from

his wife, closed his lips and followed her obediently upstairs. Mr. Price, filling his pipe from a paper of tobacco on the mantelpiece, winked at himself encouragingly in the glass and smiled gently as he heard the chinking of the coins upstairs.

"Be careful about the size," he said, as Mr. Spriggs came down and took his hat from a nail, "about a couple of inches shorter than yourself, and not near so much round the waist."

Mr. Spriggs regarded him sternly for a few seconds, and then closing the door with a bang, went off down the street. Left alone, Mr. Price strolled about the room investigating, and then drawing an easy-chair up to the fire, put his feet on the fender and relapsed into thought.

About an hour later he sat in the same place, a changed and resplendent being. His thin legs were hidden in light checked trousers, and the companion waistcoat to Joseph's coat graced the upper part of his body. A large chrysanthemum in the buttonhole of his frock coat completed the picture of an Australian millionaire as understood by Mr. Spriggs.

"A nice watch and chain, and a little money in my pockets, and I shall be all right," murmured Mr. Price.

"You won't get any more out of me," said Mr. Spriggs, fiercely; "I've spent every farthing I've got."

"Except what's in the bank," said his brother-in-law; "it'll take you a day or two to get at it, I know. S'pose we say Saturday for the watch and chain?"

Mr. Spriggs looked helplessly at his wife, but she avoided his gaze. He turned and gazed in a fascinated

fashion at Mr. Price, and received a cheerful nod in return.

"I'll come with you and help choose it," said the latter. "It'll save you trouble, if it don't save your pocket."

He thrust his hands in his trousers pockets, and spreading his legs wide apart, tilted his head back and blew smoke to the ceiling. He was in the same easy position when Ethel arrived home accompanied by Mr. Potter.

"It's—it's your Uncle Gussie," said Mrs. Spriggs, as the girl stood eying the visitor.

"From Australia," said her husband, thickly.

Mr. Price smiled, and his niece, noticing that he removed his pipe, and wiped his lips with the back of his hand, crossed over and kissed his eyebrow. Mr. Potter was then introduced and received a gracious reception, Mr. Price commenting on the extraordinary likeness he bore to a young friend of his who had just come in for forty thousand a year.

"That's nearly as much as you're worth, uncle, isn't it?" inquired Miss Spriggs, daringly.

Mr. Price shook his head at her and pondered. "Rather more," he said at last, "rather more."

Mr. Potter caught his breath sharply. Mr. Spriggs, who was stooping to get a light for his pipe, nearly fell into the fire. There was an impressive silence.

"Money isn't everything," said Mr. Price, looking round and shaking his head. "It's not much good, except to give away."

His eye roved round the room and came to a rest finally upon Mr. Potter. The young man noticed with a thrill that it beamed with benevolence.

"Fancy coming over without saying a word to anybody; and taking us all by surprise like this," said Ethel.

"I felt I must see you all once more before I died," said her uncle, simply. "Just a flying visit, I meant it to be, but your father and mother won't hear of my going back just yet."

"Of course not," said Ethel, who was helping the silent Mrs. Spriggs to lay supper.

"When I talked of going your father 'eld me down in my chair," continued the vexatious Mr. Price.

"Quite right, too," said the girl. "Now draw your chair up and have some supper, and tell us all about Australia."

Mr. Price drew his chair up, but, as to talking about Australia, he said ungratefully that he was sick of the name of the place and preferred instead to discuss the past and future of Mr. Potter. He learned among other things that that gentleman was of a careful and thrifty disposition, and that his savings, augmented by a lucky legacy, amounted to a hundred and ten pounds.

"Alfred is going to stay with Palmer & Mays for another year, and then we shall take a business of our own," said Ethel.

"Quite right," said Mr. Price meaningly; "I like to see young people make their own way. It's good for 'em."

It was plain to all that he had taken a great fancy to Mr. Potter. He discussed the grocery trade with the air of a rich man seeking a good investment, and threw out dark hints about returning to England after a final visit to Australia and settling down in the bosom of his family. He accepted a cigar from Mr. Potter

after supper and, when the young man left, at an unusually late hour, walked home with him.

It was the first of several pleasant evenings, and Mr. Price, who had bought a book dealing with Australia, from a second-hand bookstall, no longer denied them an account of his adventures there. A gold watch and chain, which had made a serious hole in his brother-in-law's savings-bank account, lent an air of substance to his waistcoat, and a pin of excellent paste sparkled in his neck-tie. Under the influence of good food and home comforts he improved every day, and the unfortunate Mr. Spriggs was at his wit's end to resist further encroachments. From the second day of their acquaintance he called Mr. Potter "Alf," and the young people listened with great attention to his discourse on "Money—How to Make It and How to Keep It."

His own dealings with Mr. Spriggs afforded an example which he did not quote. Beginning with shillings he led up to half-crowns and, encouraged by success, one afternoon boldly demanded a half-sovereign to buy a wedding present with. Mrs. Spriggs drew her overwrought husband into the kitchen and argued with him in whisper.

"Give him what he wants till they're married," she entreated; "after that Alfred can't help himself, and it'll be as much to his interest to keep quiet as anybody else."

Mr. Spriggs, who had been a careful man all his life, found the half-sovereign and a few new names which he bestowed upon Mr. Price at the same time. The latter listened unmoved. In fact a bright eye and a pleasant smile seemed to indicate

that he regarded them rather in the nature of compliments than otherwise.

"I telegraphed over to Australia this morning," he said, as they all sat at supper that evening.

"About my money?" said Mr. Potter, eagerly.

Mr. Price frowned at him swiftly. "No, telling my head clerk to send over a wedding present for you," he said, his face softening under the eyes of Mr. Spriggs. "I've got just the thing for you there; I can't see anything good enough over here."

The young couple were warm in their thanks.

"What did you mean, 'about your money?'" inquired Mr. Spriggs, turning to his future son-in-law.

"Nothing," said the young man, evasively.

"It's a secret," said Mr. Price.

"What about?" persisted Mr. Spriggs, raising his voice.

"It's a little private business between me and Uncle Gussie," said Mr. Potter, somewhat stiffly.

"You—you haven't been lending him money?" stammered the brick-layer.

"Don't be silly, father," said Miss Spriggs, sharply. "What good would Alfred's little bit o' money be to Uncle Gussie? If you must know, Alfred is drawing it out for uncle to invest it for him."

The eyes of Mr. and Mrs. Spriggs and Mr. Price engaged in a triangular duel. The latter spoke first.

"I'm putting it into my business for him," he said, with a threatening glance, "in Australia."

"And he didn't want his generosity known," added Mr. Potter.

The bewildered Mr. Spriggs looked helplessly round the table. His wife's feet pressed his, and like a me-

chanical toy his lips snapped together.

"I didn't know you had got your money handy," said Mrs. Spriggs in trembling tones.

"I made special application and I'm to have it on Friday," said Mr. Potter with a smile. "You don't get a chance like that every day."

He filled Uncle Gussie's glass for him, and that gentleman at once raised it and proposed the health of the young couple. "If anything was to 'appen to break it off now," he said with a swift glance at his sister, "they'd be miserable for life, I can see that."

"Miserable forever," assented Mr. Potter in a sepulchral voice as he squeezed the hand of Miss Spriggs under the table.

"It's the only thing worth 'aving—love," continued Mr. Price, watching his brother-in-law out of the corner of his eye, "money is nothing."

Mr. Spriggs emptied his glass, and, knitting his brow, drew patterns on the cloth with the back of his knife. His wife's foot was still pressing on his, and he waited for instructions.

For once, however, Mrs. Spriggs had none to give. Even when Mr. Potter had gone and Ethel had retired upstairs, she was still voiceless. She sat for some time looking at the fire and stealing an occasional glance at Uncle Gussie as he smoked a cigar; then she arose and bent over her husband.

"Do what you think best," she said in a weary voice. "Good night."

"What about that money of young Alfred's?" demanded Mr. Spriggs, as the door closed behind her.

"I'm going to put it in my busi-

ness," said Uncle Gussie, blandly, "my business in Australia."

"Ho, you've got to talk to me about that first," said the other.

His brother-in-law leaned back and smoked with placid enjoyment. "You do what you like," he said easily. "Of course if you tell Alfred I shan't get the money, and Ethel won't get 'im. Besides that he'll find out what lies you've been telling."

"I wonder you can look me in the face," said the raging bricklayer.

"And I should give him to understand that you were going shares in the hundred and ten pounds, and then thought better of it," said the unmoved Mr. Price. "He's the sort o' young chap as'll believe anything. Bless 'im."

Mr. Spriggs bounced up from his chair and stood over him with his fists clenched. Mr. Price glared defiance.

"If you're so partikler, you can make it up to 'im," he said, slowly. "You've been a saving man, I know. And Emma 'ad a bit left her that I ought to have 'ad. When you've done play acting I'll go to bed. So long."

He got up yawning, and walked to the door, and Mr. Spriggs, after a momentary idea of breaking him in pieces and throwing him out into the street, blew out the lamp and went upstairs to discuss the matter with his wife until morning.

Mr. Spriggs left for his work next day with the question still undecided, but with a pretty strong conviction that Mr. Price would have to have his way. The wedding was only five days off, and the house was in a bustle of preparation. A certain gloom which he could not shake off he attributed to a raging toothache,

turning a deaf ear to the various remedies suggested by Uncle Gussie, and the name of an excellent dentist who had broken a tooth of Mr. Potter's three times before extracting it.

Uncle Gussie he treated with bare civility in public, and to blood-curdling threats in private. Mr. Price, ascribing the latter to the toothache, also varied his treatment to his company; prescribing whiskey held in the mouth and other agreeable remedies when they were listeners, and recommending him to fill his mouth with cold water and sit on the fire till it boiled when they were alone.

He was at his worst on Thursday morning; on Thursday afternoon he came home a bright and contented man. He hung his cap on the nail with a flourish, kissed his wife, and, in full view of the disappearing Mr. Price, executed a few clumsy steps on the hearthrug.

"Come in for a fortune?" inquired the latter, eying him severely.

"No, I've saved one," replied Mr. Spriggs gayly. "I wonder I didn't think of it myself."

"Think of what?" inquired Mr. Price.

"You'll soon know," said Mr. Spriggs, "and you've only got yourself to thank for it."

Uncle Gussie sniffed suspiciously. Mrs. Spriggs pressed for particulars.

"I've got out of the difficulty," said her husband, drawing his chair to the tea-table. "Nobody'll suffer but Gussie."

"Ho!" said that gentleman, sharply.

"I took the day off," said Mr. Spriggs, smiling contentedly at his wife, "and went to see a friend of

mine, Bill White, the policeman, and told him about Gussie."

Mr. Price stiffened in his chair.

"Acting—under—his—advice," said Mr. Spriggs, sipping his tea, "I wrote to Scotland Yard and told 'em that Augustus Price, ticket-of-leave man, was trying to obtain a hundred and ten pounds by false pretenses."

Mr. Price, white and breathless, rose and confronted him.

"The beauty o' that is, as Bill says," continued Mr. Spriggs with much enjoyment, "that Gussie'll 'ave to set out on his travels agin. He'll 'ave to go into hiding, because if they catch him, he'll 'ave to finish his time. And Bill says if he writes letters to any of us it'll only make it easier to find 'im. You'd better

take the first train to Australia, Gussie."

"What—what time did you post—the letter?" inquired Uncle Gussie, jerkily.

"'Bout two o'clock," said Mr. Spriggs, glancing at the clock. "I reckon you've just got time."

Mr. Price stepped swiftly to the small sideboard, and taking up his hat clapped it on. He paused a moment at the door to glance up and down the street, and then the door closed softly behind him. Mrs. Spriggs looked at her husband.

"Called away to Australia by special telegram," said the latter, winking. "Bill White is a trump; that's what he is."

"Oh, George," said his wife. "Did you really write that letter?"

Mr. Spriggs winked again.

Judge Lindsey's Children's Court

THE ARENA.

Judge Lindsey's theory is in effect that the state is as much the guardian of a child's morals as it is of its property interests. To him, the parents are the responsible parties who must be punished if their children err. He has secured legislation making parents responsible for the misdemeanors of the children, and, by a wise and beneficent treatment of the youthful criminal, he is gradually reforming the morals of the youth of Denver.

SOME years ago Judge Lindsey's attention was called to the methods pursued by the state in the treatment of juvenile offenders. The more he studied the matter the more thoroughly he became convinced that the attitude of the state towards offending children was marked by a brutal indifference to its most sacred charge and an ignorance or short-sightedness that represented the extreme of folly, because it fostered crime and thus entailed great expense on society while lowering the morals of the community. He believed that

an entirely different course would save to the nation annually thousands of boys and girls who under the prevailing treatment were becoming hardened criminals—a curse to themselves, a menace to society and a great expense to the state. He believed that while every consideration of economy and of ordinary business wisdom imperatively demanded a radically different method of treatment, above and beyond all this there rose the demand of justice to the child, to the state and to civilization, which the old treatment of the young

offenders ignored. He saw that where property was concerned the state was zealous in protecting the interests of the child, holding that the child was irresponsible till he arrived at his majority and appointing guardians for his property interests; but at the same time, in most commonwealths, the child of ten who committed an offence against the law was held accountable and punished for the same, while the parents whose carelessness and indifference in many instances made them the responsible criminals were ignored by the department of justice. His experience in dealing with crime showed that the young were in a vast majority of cases the victims of environment, the plastic instruments whose downward inclination was due largely if not chiefly, to improper, careless or negligent home influences; bad associations on the street and careless indifference on the part of government and society together uniting to make them transgressors before they had arrived at the age when the character is formed or they have any adequate realization of moral relations. More than this: he was satisfied from a study of the problem, supplemented by close personal observations, that children around whom home and state threw their combined protecting care in a loving manner would rarely become other than honorable and useful citizens. The great need of the child was the correcting so far as possible of enviroing conditions, reinforced by moral stimulation authoritatively yet lovingly enforced by the state. Crime cannot be justified and society must be protected, but if the children be regarded as victims rather than as responsible moral agents, and the state keeps in mind the awful responsibility devolving on it in the presence of a human soul, and if it recognizes the

wisdom and policy as well as the duty of saving the child as a self-respecting member of society instead of through an idolent, short-sighted, brutal and ignorant course making him an enemy of society and a curse and expense to the state, one of the greatest and to civilization most fundamentally important victories of modern times will be won.

Now to demonstrate the truth of his enlightened conclusions, which it will be noted are in perfect alignment with the ethics of Jesus, Judge Lindsey consecrated his life. Legislation was secured necessary to make the parents responsible for the misdemeanors of the children. This was a great victory. Next the Judge addressed himself to the attitude of the state toward the offending child, introducing an innovation that was thoroughly revolutionary in character. Keeping in view the fact that the young are largely irresponsible victims, he has made the School Court a genuine state confessional, where the young have learned to know that they will receive loving, sympathetic and strengthening counsel and advice in all efforts to atone for wrongs and to become strong, brave, self-respecting men and women. The Judge never lets the child feel that crime is to be justified, but he also always makes him see that in him, the representative of the state, the weak or offending one has a loving elder brother who understands the trials and temptations that beset the offender and who stands ready to save him from disgrace and prison and to help him upward and onward.

Heretofore the state has been concerned with the reclamation of stolen property and the punishing of criminals, without any due regard to the salvation of the little offenders. As

a result children have been arrested, disgraced, imprisoned and allowed to mingle with hardened criminals; and often the slight offender has through this cruel and unjust process become a confirmed law-breaker, a menace to society, a constant expense to the state, and a curse to his family and to himself.

All this, so far as Denver is concerned, is past, and the results that have followed have more than justified the most sanguine expectations of Judge Lindsey and his co-workers. Hundreds upon hundreds of children have been saved to the state without the humiliation and degradation attending the old methods. Hundreds of children are to-day among the brightest and most promising of Denver's young citizens who under the old system would have been in reform-schools or prisons, or Ishmaelites of civilization, embittered by the deep conviction that the state was their enemy and with the feeling that they had little or no chance of a fair show in life.

The course pursued by Judge Lindsey has demanded work, patient, tireless, loving service such as only an apostle of humanity would devote to the experimental effort for the redemption of the unfortunates of society and the ennoblement of manhood. Judge Lindsey has had to convince the young that he was their friend, entitled to their confidence; that the state was their loving protector and not their enemy. He has shown them that the state must protect all the people; that it cannot permit wrong to be done and take no notice of the offense; but that it wishes to be just and to lift, help, support and sustain the child who has gone astray: that its purpose is two-fold: to protect society and to help the unfortunate and the erring

to be strong, fine helpers of civilization and the state.

And it is wonderful to see how whole-heartedly the young have responded to this call to the divine in their souls—to this call of the human to the human, pitched in the key of love.

The work inaugurated and carried forward by Judge Lindsey is epoch-marking and in many respects analogous to the splendid work inaugurated by Phillippe Pinel more than a century ago in the treatment of the insane, which changed the whole age-long method of dealing with insanity and turned the face of medical science from the night of the dark ages to the dawn of a love-illuminated civilization.

Some idea of the success of Judge Lindsey's efforts may be gained from the fact that during one year three hundred children voluntarily came to the Judge, confessed to wrong-doing and asked for his aid and discipline to help them become what they wished to be—good boys and girls. One little fellow, taken on suspicion of having committed a serious offence, confessed to the Judge his wrong-doing. Later he induced five or six companions to voluntarily confess and give themselves up to the Judge. One little chap came into the court one evening and inquired if Judge Lindsey was there. On being taken into a private apartment he said: "Judge, I've been swipin' things, and I want to cut it out; and I want you to help me." The Judge asked what brought him there. He mentioned a companion who had been on probation. "He told me to come," continued the little fellow. "He told me if I didn't cut it out and do what was right, it would only be a little while before the cop would get me and I would go to prison, but if

I'd cut it out and come to you, you would help me."

Six years ago many of the boys in the state industrial school were seen in the yards with balls and chains attached to prevent them running away. Under the new order all this has been changed. When the Grand Army encamped at Denver the boys in the reform-school naturally longed to be present to see the soldiers, to hear the music and to behold the city in gala dress. Judge Lindsey proposed to give them the opportunity to spend the day in Denver under no surveillance and with no pledge other than their own word given to him that they would return voluntarily to the school at a certain hour. The believers in the old order were horrified at the proposition. They deemed it reckless. They did not understand the new spirit that had come with the inauguration of a system of divine justice or justice illumined by love. The Judge went to the boys and said: "Boys, how many of you would like to go to Denver and spend the day?" Of course the whole school was eager for the great holiday. Then the Judge told them that he believed in them; he believed that no boy in the school would give him a pledge and then break it; and believing that, he had given his pledge that every boy would be back in his place at a certain hour if they were allowed to go. All the boys promised and the school of over two hundred went to Denver, and every boy returned at the appointed time.

Boys sentenced to the reform-school are frequently sent alone and unattended, bearing their commitment papers and none have betrayed their trust.

Do you say that this is simply owing to the power of this wonder-

ful man? The Judge will tell you, No, and in proof he will point to the system which, patterned after that of Denver, has been introduced and brought into practical operation in Salt Lake City and in Omaha. He will tell you that in the former city the boys sentenced at the reform-school are given their commitment papers and sent unattended to Ogden, and in only one instance has a boy attempted to run away, and for that the court-officer was responsible. The boy had given his word that if trusted and sent unattended he would go to the reformatory, and he went to the depot, bought his ticket and was waiting for the train, when all at once he discovered a court-officer shadowing him. He felt at once that he had been betrayed and lied to; that he was being followed and watched. Now if the game of the court is to follow, the game of the accused is to fly, and the boy threw away his ticket and fled. When caught he declared that he had no thought of attempting to run away until he saw the court-officer and found that the state was not keeping its plighted word or faith with him.

One of the very important phases of Judge Lindsey's great reformation in behalf of the children is found in the compelling of parents to recognize in a measure at least the solemn responsibilities that devolve upon them. The result in this direction has been most positive and salutary. It has forced the parents to recognize the obligations they owe the child and the state. They have brought children into the world—future citizens, human souls facing an eternity of glory or of gloom—and upon them devolve obligations of the holiest and most sacred character. If through ignorance, thoughtlessness, indifference or wilful selfish

absorption they have evaded their duties, then the state owes it to the child and to society to compel them to perform those duties, and in cases where parents' environment is such that they are unable to cope with the problem, the state under the new regime becomes a potent assistant in the work of saving the child to society. Here are some typical cases:

Three girls between twelve and fifteen are found walking the streets after ten o'clock at night, without a chaperon. The probation officer takes them in charge. The mothers are summoned and the Judge gives them a lecture showing them what will almost surely come as a result of this morally criminal negligence. He shows them that they are the real offenders and fines them twenty-five dollars each, but suspended the payment of the fine until the children are again found on the street at unreasonable hours. The result is that the children are rescued from threatened evils that might easily lead to their ruin before they realized their peril.

A boy is brought before the Judge. He has been caught in the commis-

sion of a grave misdemeanor. He is the son of a wealthy father—a man who has become so crazed by the mania for gold that all his finer and nobler sensibilities are blunted. He is absorbed in heaping wealth. At night he comes home, sometimes the worse for wine drunk at his club, usually irritable and self-absorbed. He makes everyone in his home miserable without realizing what he is doing. Instead of gathering his little ones to him around the evening lamp, entertaining them and leading them by love's sweet way onward and upward, he neglects them. They are barks laden with precious treasure, set adrift on a treacherous sea without compass or rudder, without captain or pilot. Now it is not long before the Judge has the recreant, gold-drunken father on the carpet. He is brought face to face with his delinquent conduct and its fearful results. He is made to see that he, not the neglected boy, is the greater criminal, and he is fined and warned that far more serious consequences await him if he continues to neglect his boy.

A Royal Dressmaker's Handiwork

WORKER'S MAGAZINE

The beautiful Queen Amelie of Portugal besides her accomplishments as a physician, nurse, artist and musician, is also a clever needlewoman. She has recently made an elaborate dress for herself which has been much talked about in society circles in Europe, great praise being bestowed on the royal dressmaker.

QUEEN AMELIE, of Portugal, the most beautiful queen in the world and one of the most talented of women, has made a dress for herself for Spring wear—a dress which, while they are pattering after it, the dressmakers of Europe, especially of Paris and London, jealously declare that the queen adapted

from a pattern in a Parisian fashion journal. This statement is denied vigorously by the queen's ladies, who declare she designed, cut, and draped it herself.

Whether or not the queen evolved the entire gown or adapted it from some pattern, no one has dared ask her majesty, and even those who

charge her with plagiarism of the gown are copying it for the Spring and early Summer wear, especially in Great Britain, where the Spring is later.

The queen made the gown with her own hands, cutting, basting, and sewing it herself, without the aid of any of her women, and she used an American sewing machine to do part of the work. The gown when finished, she wore immediately, and her first appearance in it was while driving in Lisbon. On that occasion the gown provoked but little attention, because her subjects are accustomed to see the queen well dressed, but later when she wore the gown during a morning stroll in the grounds that surround the Necessidades palace one of her ladies in waiting remarked to a courtier that the gown worn by the queen was made by her own hands.

Then the gown became one of the most famous in the world, for perhaps never before has any queen made a dress for herself, and the news that the queen had acted as her own dressmaker added to her great popularity with the people of Portugal.

Dressmaking is but an added accomplishment for Amelie. She is a physician and surgeon, a graduate in anatomy, a trained nurse, and medicine and nursing are her hobbies. Besides this she is a skilled musician and paints well, several of her paintings having been exhibited anonymously in Portugal and Spain. For years, also, it has been known that she made her own bonnets and hats, showing wonderful taste and artistic sense in making headwear and re-trimming Parisian hats. But never before, so far as was known, has she ever attempted to make her own gowns.

Despite the claims of Parisian experts that the ideas in the making of the gown were filched from fashion journals the ladies in waiting declare that Amelie designed the gown herself, using an old gown to cut by, and requiring the assistance of one of the women of the royal court as a lay figure upon which the gown was shaped finally.

The gown was made, according to the ladies of the court, during a visit of the royal family to Pena Castle, the country palace of the king and queen, late in February. King Carlos is an ardent hunter and sportsman, and during the stays at Pena he and the gentlemen of his court are in the field a great portion of the time, so the queen devoted the days to making the gown.

The material of the "suit"—as Americans would call it—is a fine lined medium weight cloth of French manufacture, and the color is a shade darker than champagne color, the trimming effects being accomplished by the use of braid of a dark brown color. The suit is a bolero one, and the bolero really is the main feature of the entire gown, as the skirt is an extremely simple yet effective one.

The skirt, as described by dressmakers, is cut in five parts, the cloth being cut identical to the linings, which are of silk. The top of the skirt is fitted to the perfect figure of the queen by the use of two hip darts on each side and the sloping of the gores for eight or nine inches below the waist line, this being possibly two inches more than would be required by a woman of less perfect figure.

Evidently, the dressmakers say, the queen cut the skirt from the folded material, commencing at the seamless front, the seams being im-

perceptible in the folds, which are full, and every gore is cut the right way of the material.

Whether the queen made her skirt that way or not, that is the way the dressmakers are making it, and, according to them, they get the same effect and perfect hang. The placket opening is made at the side seam, with a false lap, and then silk to hem down the overlap.

Wide braid is used on the skirt, with little medallions of the braid that make it extremely catchy in appearance.

The bolero is made quite loose at the waist, and can be worn either open or as a waistcoat, over which the coat fronts lap slightly and fasten again. When worn open the vest is left still fastened down the front.

The braid strappings across the bolero add to its firmness, and these

strappings continue around, concealing the seams. The undersleeves worn by the queen were of white silk.

A little puffed piece runs down the centre of the sleeve, adding to the charm of the garment, and aiding in relieving it of severity. The bolero is faced inside to make the revers, the facing evidently being done separately and then felled inside the fronts.

The dressmaker - doctor - nurse - queen is the daughter of the Count of Paris, and it was during her early life in England, before she became the bride of the prince, who, three years later, became King Charles I, that she learned dressmaking. It is known that she interested herself in homely arts as a young girl, and it is believed that she learned something of the dressmaking art from one of her servants in England.

New Fields for Woman's Work

HERALD MAGAZINE.

Nobody knows much about the secret service work done throughout the world by women. They themselves exercise a discreet silence and their employers would certainly not betray them. These are the women who bring custom to modistes, who secure information for art dealers and who arrange marriages and yet who pose as independent leaders of society.

THE number and variety of occupations in which women are successful breadwinners will never be fully tabulated, despite the vigilance of Government labor reports and municipal census takers. For to one woman who is earning a living in a recognized profession, trade or miscellaneous calling there are two or more who, without apparent labor, are legitimately paying their way through this "vale of tears" by rendering of services known only to their employers.

In all phases of world's work, from the making of peace between warring nations, locating the whereabouts of a bona fide "old master," to the local merchant who would be apprised daily of the brand and prices of his rival's stock, secret service plays a vital part. How largely women are employed will always be a matter of conjecture, since upon their reticence no less than Sherlock Holmes genius depends their success and reward.

In Paris there is a woman of title

whose social position is financially sustained by a famous art dealer. She has a splendid hotel, conspicuous turnouts and exquisite gowns. She is a shining light at notable social gatherings throughout Europe. By virtue of her inherited social position she has entree to the most exclusive homes of the old noblesse in France and elsewhere on the continent, and so may are her charms that her society is eagerly sought. In short, the lady was rich in everything but ready money until she joined the secret service of the art dealer, to whom she is now invaluable. She knows the extent, condition and value of the private art collections of the aristocracy and she keeps close tab upon the fluctuations of their owners' finances.

When my Lady of Secret Service discovers that Monsieur the Count, whose palace is hung in priceless Gobelein tapestries or whose gallery has un vrai Velasquez, Rembrandt or Titian is hard pressed for money she informs her employer the art dealer.

The latter has a customer, generally an American, who would give a king's ransom to possess anything from Monsieur the Count's collection.

Cautiously, deftly, diplomatically, my lady brings together under social guise the dealer and the Count. Presto! A bargain is struck. Should the Count suspect my lady's secret service her cake would be dough.

Once the coveted treasure is in the art dealer's possession, the cable flashes that it has been purchased by a rich American or it will adorn some museum. In a Fifth avenue gallery it may be exhibited, while lively bids are made the envied dealer by our multimillionaire collectors.

There are scarcely less women bread winners in high society than in

the humblest walks of life, but of their money-earning capacity the world little suspects. That they are wage earners they would in all probability strenuously deny.

Some of the best dressed society women of Paris, London and New York are clothed by modistes, boot makers and jewelers in payment for the customers they secure them in the smart world. Not a few much talked of people are kept in the public eye by the pens of handsomely paid writers, whose names are concealed no less from the public than is their purpose from the publications that print their effusions relative to their secret employers. Scarcely a publishing house, on the other hand, is without one or more well-known society women in its secret employ to "talk up" its various novels, books of poems or other publications.

Barter in social introduction and chaperonage has long ceased to be secret service, and is now profitably conducted in the open. One of the most successful women in this once invisible means of money earning was the late Mrs. M. A. M. Sherwood, who piloted the daughter of Mr. Collis P. Huntington into the English peerage, and her most conspicuous successor is Miss Fanny Reid, of Paris, sister of the late Mrs. Paran Stevens. Miss Reid, as the smart world knows, was handsomely paid for making possible the match between Anna Gould and Count Castellane.

Large cities are the happy hunting ground of secret service toilers. In small towns resources are too quickly exhausted and identity too readily unveiled. There is a large army of women in New York who live and

dress well upon merchant commissions. They move from boarding house to boarding house, from hotel to apartments, everywhere recommending the women they meet there to send gowns to be cleaned to such or such a dyer or to have their palms read by Madame This or Professor That, the palmist or mental healer.

In the dry goods districts of Gotham the autocracy of the buyer is being largely superseded by a newly created official, the superintendent of merchandise. In all up to date dry goods stores the office of the latter is the centre of activity. It is piled high up with samples of all sorts of merchandise purchased at rival stores by "spotters" in the firm's secret employ. Most of the "spotters" are women, and as it is almost impossible for them to enter a rival store two or three times without being suspected by the house's detectives and summarily ejected, the

length of their service depends wholly upon their skill in escaping detection.

From shop to shop they go, examining and pricing goods. Each day they are given a certain article to look up and bring back to the superintendent of merchandise, report of the cut, quality and price. Not content with oral report, the head of merchandise often instructs them to purchase a coat, dress or waist that it may be compared with the stock they are offering the trade. More disagreeably work could hardly be imagined. The pay is by no means in proportion to the labor and the risk the woman "spotter" runs of encountering insult and expulsion. Growing is the number of women in the secret employ of Wall street banking and broker houses. For every depositor or investor they secure, handsome is the commission and no one is the wiser, so guardedly is the secret kept.

Flowers That Cost Thousands

BY R.C.D. IN NEW YORK POST.

Thousands of dollars are paid by flower fanciers for rare species. Orchids, carnations, dahlias and tulips are flowers for which extraordinary prices are paid. To-day the orchid is the most sought after flower, and for the time being the chrysanthemum is dethroned.

FROM the point of view of a very small class, that class devoted to orchid growing, the most important result of the British Government's late mission to Tibet was the rediscovery of the Fairie lady slipper orchid, which has been lost for 50 years. The Fairie lady slipper is not only a beautiful flower in itself, but it is a famous parent, having produced some of the most remarkable hybrids known to orchid fanciers. The specimens brought from Tibet were rushed to auction rooms and sold like

so many diamonds. Plants of two or three years' growth were eagerly purchased for \$300 to \$500. Perhaps the bidding would not have been quite so keen if the buyers had known that another consignment of the precious flowers was on its way to England, but they did not know it, and preferred to run no risks. The plants can be had now for as low as \$25.

Five hundred dollars is not a high price to pay for a choice or rare orchid, if you want it badly enough. A

cattelya shown several years ago at a Paris horticultural exhibition, had a light violet blue corolla instead of the violet rose corolla of its kind, and this detail raised the price of the plant to 12,000 francs. The owner did not reap a tremendous profit after all, for he had spent much money for it, and had risked his life to get it out of the Venezuelan forest where it blossomed.

Mr. Sanders, of St. Albans, England, gave \$6,000 for a new specimen of the *Odontoglossum crispum pittratum*, not many weeks ago, and seemed to consider that he had a bargain. The orchid, with the long name, is described as an exquisite thing, white, with a faint rose tinge, the petals heavily blotched with red and brown, and the reverse side purple. Other specimens of the same orchid have brought \$4,000, but this one was declared to be the most perfect ever exhibited. Five other rare orchids brought the sum of \$11,000 at the same auction.

For all these extravagant prices, growers declare that there is little profit in orchids, except in the commoner varieties, the cattelya and laelias affected by fashion. These sell in the flower stores all the way from thirty-five cents to a dollar a blossom, and plants may be had from \$2 upwards.

It is extremely difficult to raise any except those everyday orchids. The rare varieties are evasive to the last degree, and their production is attended with all kinds of unexpected complications. The seedlings require years of care. In the first place the seeds of orchids are like fairy dust, so tiny that they can be seen only under a strong glass. The invisible seeds are planted in chopped moss or bark, and they have to be transplant-

ed before they are large enough to be seen except under the glass. Out of a thousand seedlings the grower is lucky if he saves a few dozen plants. Even the common varieties are none too common, so great is the waste of seeds. The orchid does absolutely nothing towards perpetuating itself except to live and bloom as attractively as it knows how. It depends on wandering insects and birds to carry its pollen. Everybody's business is nobody's business, and the pollen nine times in ten is not carried, or is lost. Of every thousand orchid flowers a very small proportion ever seed. Of course the growers have been able to overcome part of this difficulty, but they are at a loss most of the time to produce the rarer flowers. Yet the craze, probably on this very account, is growing year by year.

The carnation is another flower for which fancy prices are obtained. Every one remembers the Lawson pink, for which \$30,000 was paid. Now comes word of a newly discovered white carnation, which promises to eclipse that celebrated blossom. In the annual Spring show of the Massachusetts Horticultural Society, just closed at New Bedford, H. A. Jahn, a local grower, exhibited a white carnation, which as yet bears only a number, but will soon, no doubt, be christened. The flower was exhibited as No. 49, was perfectly snow white in color, and the largest specimens measured four inches across. The largest of the Lawson pinks were a little more than three inches.

Mr. Jahn does not know how he did it, but has been making experiments in propagating carnations for some time. The parents of the new flower were splendid specimens with lineage going back to the Wil-

liam the Conqueror of carnations. They were fragrant pinks, and the new flower possesses this last requisite to perfection, although most large carnations are lacking in perfume.' Mr. Jahn indignantly refused an offer of \$8,000 for his pink, and, of course, it is worth a great deal more than that. We shall doubtless hear of its purchase for some fabulous sum by one or another of the billionaires.

The carnation—flower of Jove—has always had its admirers. It was a fashionable flower in old Greece and Rome, and probably was expensive, if any flowers were expensive in those days. The reason of its popularity, even in ancient days lay in its tendency to "sport" or vary. The flower was small and intensely fragrant, originally, and the edges were deeply fringed. As for its color, no one ever knew what a plant was going to do, and the uncertainty gave it value. All through the middle ages it was cultivated, and in France, during the sixteenth century, there was a veritable craze for it. In 1750 growers began to breed off the fringes from the petals of carnations and to try for a larger and more rose-like blossom. Now we have flowers with edges almost smooth, and a very full calyx.

For a time it looked as if the dahlia were going to be another flower for the horticulturists to lose their heads over. The dahlia, like the chrysanthemum, is a work of art, rather than of nature. It has evolved to its present perfection of size and color from an insignificant little spiny object, valued chiefly for its rarity and its tendency to variation. In 1784 the director of the botanical gardens in the City of Mexico sent his friend, the director

of the botanical gardens in Madrid, a curious orange-red flower set around an orange-yellow centre. The flower consisted of a single row of spiny petals, very stiff and unflower-like, but rich in color. The Madrid director adopted the flower, calling it dahlia, after Dahl, a Swedish botanist. Specimens of the plant reached Germany soon afterwards, and whoever got hold of it there called it georgina, not after any King George, but in honor of a Russian named Georgi. Until recently the flower has been called georgina in Germany.

Of course, these stories irresistibly recall the historic tulip craze which swayed the Netherlands in the seventeenth century. That madness, often alluded to, is yet little understood nowadays. The story of the tulip mania, is, in brief, this: A certain Dr. Clusius settled in Leyden early in the century and occupied himself with the innocent amusement of a garden. He had brought with him from Germany a number of bulbs which the climate of Holland was remarkably favorable to, and the garden of Dr. Clusius became famous in a single season for its tulips. All the flower lovers in Leyden, and later many growers from other cities flocked to the place to admire the new flowers. The proud possessor was an obstinate man, and steadily refused all offers to sell a single bulb. It is said that he refused an offer of \$35 for a bouquet of blossoms.

The reward of his selfishness was swift. He awoke one morning to find his garden looted of every tulip. In the night some of the neighbors had climbed the wall and took what they had been unable to get by legitimate means. The old man was heart-broken. Nor did he

ever enjoy his revenge, for by this time people began to import bulbs from Germany, and when tulips began to blossom all over Leyden next Spring, it was impossible to tell which had been stolen and which imported.

The cultivation of tulips now became the fashion. To produce a new variety of tulip became a veritable passion. The tulip is one of the most variable of plants. The bulb, formed almost like an onion, possesses in every ring a possibility of a complete change of form and color. In fact it is bound to "break" as the florists express it, and the break may come in a year or twenty years. The rarest varieties sometimes evolve from quite common stock.

The tulips of Holland became more famous than any flower of any country. To present a lady with a bouquet of Dutch tulips was the most extravagant expression of devotion possible. Extravagant in a double sense, possibly, for the flowers were often sent by special couriers at great expense to the sender.

The prices paid for choice specimens were beyond reason. Considering the purchasing power of money at the time, seven thousand florins for a single bulb seems incredible. Yet that sum was paid for a fine specimen of *Semper Augustus*. This tulip is described as pure white with red, ribbon-like stripes, and on the tips of the petals a suggestion of delicate blue. The story of a sailor who ate a bulb of this wonderful variety is familiar. The unhappy man mistook the bulb, worth \$1,500, for an onion, and ate it with a herring for his luncheon. He was mobbed by the crowd to which the frenzied purchaser confided his loss, was beaten and put in prison.

Another fine tulip was given as a dowry, and a sufficient one, to the daughter of the grower. The tulip was called "Marriage of My Daughter." Was there really a black tulip? Tradition says that one was evolved at The Hague. The grower was a poor man, and when a syndicate from Amsterdam came to the garden and offered a large sum the man sold his bulb. The money paid, the bulb was deliberately destroyed under the feet of the syndicate. The tulip grower went mad.

The craze in Holland reached its height about 1634. By this time nobody wanted to do anything but speculate in tulip values. Most people had lost all interest in the flowers themselves, and the speculating fell into the hands of brokers who hardly knew a *Semper Augustus* from an Admiral Liefkens. It was no longer necessary to have the actual bulbs. People sold short of the market and bet on crops as wildly as wheat and corn speculators of the present day. The end came suddenly and dramatically. A number of growers, disgusted with the degeneracy into which their beloved occupation had been sunk, combined. They threw their entire stock on the open market, and in the Black Friday of tulips thousands of men lost their fortunes. It was years before the country recovered from the disaster.

All this sounds like a fantastic tale, and might be dismissed as tradition were it not for the proof of such literature as "Evelyn's Dairy," pages from the Tatler, and other contemporary literature. They do not merely chronicle it is plain that the enthusiasm of the Dutch was shared throughout Europe and that the wisest of men took the tulip craze with perfect seriousness.

Labor Problem in Undeveloped Countries

BY HON. JAMES BRYCE IN WINDSOR MAGAZINE.

The learned author of "The Holy Roman Empire" and "The American Commonwealth," who now holds the post of Secretary for Ireland, in the Liberal Government, writes with insight and conviction on a problem which is to-day confronting Englishmen in connection with the working of the mines in South Africa.

LAND and labor have been the two main sources of strife between Europeans and the backward peoples ever since the colonization and conquest of countries outside Europe began. It was out of the taking of their lands by the Spaniards and the English that ware between the settlers and the aborigines first began in America and have lasted down to our own days.

But these land disputes have now virtually ended, for the whole of both America and Africa, as well as Northern Asia and India, has passed under the dominion of nations from Europe; and where whites leave natives in possession of their own land, they do this either from motives of policy, or because they are not yet numerous enough or not yet sufficiently acclimatized to appropriate these lands for themselves.

Accordingly it is with labor questions more than land questions that economists and governments are now chiefly concerned.

The beginning of these labor questions—between civilized men and savages—dates from the fifteenth century, when the Portuguese, imitating the Mussalman corsairs and land-raiders of North Africa, began to seize the blacks of the West African coasts and sell them as slaves in Portugal.

That exploration of Africa, of which the Portuguese are justly proud—for in it they showed remarkable courage and enterprise—was no less concerned with the pursuit of slave labor and gold than with the

spreading of the Gospel or the advancement of discovery. It was half crusading, half commercial.

Then, and for three centuries afterwards, men saw nothing incompatible in destroying, or enslaving, men's bodies while seeking to save their souls.

When the Spaniards occupied the Antilles, the first thing they did was to set the natives to work in the mines; and when these unhappy creatures died out, as they soon did under harsh treatment, negroes were brought from Africa to fill the void and provide the labor needed, both for mining and tillage.

Slavery had by this time disappeared from Western Europe, though a comparatively mild form of serfdom lingered in some districts. Prisoners of war were no longer, as had been the case in the ancient world, made slaves of. But when the white races came into contact with races of another color, they ignored the principles they applied among themselves and treated the African blacks and the American aborigines as no better than cattle, without human rights, and, in fact, for the use of those conquerors who could capture them.

So began the Slave Trade, the most horrible form which the oppression of the weaker by the stronger races has ever taken.

There was an economic need prompting it. Here were fertile tracts to be cultivated, and no labor on the spot to cultivate them, because the natives, naturally feeble and in-

dolent, had been driven away or extinguished by harsh treatment, and the white settlers were, or thought themselves, unfit for open-air toil under a torrid sun. Thus slavery came to prevail, not only in the West India Islands, but in the southern part of North America and over most of South America, for more than three hundred years.

Justified as an economic necessity, it did provide a sort of solution, though a very wasteful as well as a most inhuman solution, of an urgent economic problem. From the time when the English began to colonize Virginia and the country from Virginia southward to the Gulf of Mexico there was so little white labor to be had, and that little would have been so costly, that there seemed no expedient possible except to get the labor of an inferior race accustomed to support tropical heat.

Such labor was obtainable only by kidnapping, and kidnapping excited no horror.

In our time the difficulty I have described has reappeared in a different form. White people have conquered and established themselves in tropical countries where they find mines they wish to work and lands they wish to cultivate. These countries are not empty, as the southern part of the United States was practically empty when the Carolinas and Georgia were formed into colonies—I say practically empty, because the native Indian tribes were few in number, and most of them soon died off or moved west. But these countries now annexed to European powers are tolerably well peopled.

In South Africa and East Africa, for instance, there is a negro population which holds its ground, and, indeed, increases faster than the whites.

The difficulty is that this native population does not want to work, and in particular does not want to work underground, though mine-labor is the very kind of labor which whites are most anxious to secure.

Here is the old labor question and the old race question over again. This difficulty has now become acute in South Africa. I take South Africa as a familiar instance, but this same problem has emerged in other regions also.

No sooner was the South African war over than that blissful period of high dividends, which the European companies that own the rich gold mines of the Transvaal had been promising themselves as the result of the war, was found to be thrown back into the future by the want of labor for mining operations. The natives had prospered during the war—indeed, they were the only people who seemed to have got something out of it, for they have had high wages as camp and transport workers, and have become possessed of a certain number of cattle, so they were at first even less disposed to work than before.

The mines of the Rand district alone are said to need more than three hundred thousand native laborers, and were not obtaining, when the recent war came to an end, anything approaching that number.

What is to be done? Two centuries ago the answer of the civilized races would have been prompt: "Kidnap as many blacks as you need and drive them to work by the lash."

This expedient is, however, no longer possible, though it is no doubt true that a good many Europeans settled in tropical countries would still like to be allowed to obtain labor by force. Their talk shows that they

are not far removed from the feelings of the Portuguese navigators, or the companions of Columbus, or the people who carried negroes from Guinea to South Carolina in the eighteenth century. Direct contact with an inferior race is apt to demoralize the European settler, and he drifts unconsciously back towards barbarism.

But the opinion of European nations at home forbids a recourse to the old methods. The most natural alternative would be to attract and use white labor. But white labor, which in some of these tropical countries is unavailable because the climate is too unhealthy or the heat too great, is in all of them too expensive. Wages far higher than those paid in Europe would be required to induce Europeans to face the conditions of the tropics, and mining or tillage carried on at so heavy an outlay would cease to be profitable.

The mine owner or planter is therefore driven to the only remaining alternative—that of endeavoring to import on a large scale laborers of some foreign tropical race, fit to work in the torrid zone, but willing to work for much less than white men would demand.

This plan suggested itself a good many years ago to the sugar cultivators of Demerara and to the French engineers who contracted for the making of the Panama Canal: the former imported coolies from India, the latter Chinese. So the planters of Hawaii brought in Chinese and Japanese; so the planters of Queensland in Australia have brought in Kanakas from the Isles of the Pacific.

But even this device is not always practicable, for the white population, if possessed of political power, may forbid the immigration of a colored

race, which will depress the rate of wages and constitute an element either not capable of assimilation or likely to lower the stock with which it mingles.

As awakened philanthropy now forbids slavery, so also awakened democracy forbids the influx of a type of mankind deemed unfit for social and political equality. The prohibition of Chinese immigration by the United States, by the Canadian Dominion, and by Australia is a familiar instance of this sentiment. And the desire of the Transvaal mine owners to bring in Indians or Chinese for the service of the mines is at this moment arrested by the general feeling of the middle and humbler classes of the white population of South Africa.

The whites are already in a minority in that country; so they fear, not unreasonably, the intrusion of a new colored element, which might, if it were to blend with the blacks, render the latter more formidable. So the matter stands, and it is now suggested that, instead of Chinese, negroes from some other part of Africa may be imported, each batch for a short period of service, and then carried back again to their homes.

In Queensland a somewhat similar difficulty has arisen. The sugar planters of the hotter parts of that state have kept up the working of their estates by the help of Pacific Islanders, brought from Western Polynesia and sent back after some years. The democratic sentiment of the Australian masses has resolved to stop this practice; and it is not yet clear how the sugar plantations are in future to be cultivated.

These problems of the relation of race differences to labor supply are not new problems. In one sense, they

are as old as civilization itself. They became specially acute—as already observed—when America was settled and the coasts of Africa explored at the end of the fifteenth century. They have now in our own day been again accentuated by the intrusion of European powers into countries inhabited by backward races.

* * * *

In all countries, in civilized France, Germany, and England, in the civilized United States, the relation of the working men to their employers is fertile in occasions for dispute. There is constant difficulty in adjusting the claim of the worker to his share in the gain derived from manufacturing or commercial industry. Strikes and lock-outs are the natural result of the opposing claims of the two parties, and strikes sometimes lead to breaches of the peace, especially where the laboring class is not organized in trades unions.

The sight of the ease and luxury in which the wealthy class lives excites envy among those who feel that their toil has contributed to this luxury, and who have themselves obtained a share of the gain which never gives them more than the comforts, often little more than the bare necessities, of life. There is apt to spring up a jealousy between classes, perhaps even a permanent bitterness and hostility.

Yet in civilized countries where the laboring class is entirely of European stock, this hostility is relieved and reduced by a measure of human sympathy, by the fact that all classes enjoy equal civil rights, and in free countries by the fact that they also enjoy equal political rights, and that the political means of redressing grievances are equally available to all. The sense of a common nationality and a common pride in national

greatness diminishes the feeling of antagonism which the contrast between riches and poverty provokes.

But where the laboring class belong to a different race, especially if that race is of a different color, these mitigating influences have less play. Sometimes they disappear altogether and are replaced by a feeling of complete severance.

The white employer has nothing in common with the Kaffir or coolie or Chinese workman. The influence of a common religion—which in civilized countries counts for something, though for less than might have been expected—is here usually absent. In South Africa the employer seems to prefer that the native should remain a heathen, partly because the whites generally profess to think that he is not so good a worker, partly—it may be feared—because they think that if he is a Christian, he is brought nearer to the whites.

The white man, whether he be an employer or not, feels a sense of superiority to the colored man which disposes him to contempt, often to harshness and injustice. It is only the higher and purer characters that can be trusted to deal with their inferiors, who are practically at their mercy, in the same way as they would deal with their equals.

Impunity demoralizes average mankind; and as the public opinion of the whites, taken as a whole, becomes somewhat demoralized when they control a subject race, it does not restrain acts of harshness and injustice. In such a state of things those difficulties incident to the relations of capital and labor which have been already referred to may become aggravated. The colored laboring class may become a dangerous class, because it stands quite apart from the whites.

It is a foreign element, possibly a hostile element. Till it has become organized, it may not be able to engage in the open struggle of a strike; but when it reaches that stage, the strikes are likely to be more formidable.

Meanwhile its presence brings serious political difficulties. If the country does not possess free self-governing institutions, as is the case in many British colonies, the Government is bound to protect the foreign laborers, and often finds this no easy task. If the country has free institutions, the question arises whether the backward race should be admitted to the electoral suffrage and to other political rights. Much is to be said on both sides of this question, which has been largely debated in South Africa and some other British colonies, and still more debated in the United States.

How are the difficulties which have here been indicated to be met? They are difficulties likely to last for a long time, because it must be a long time before either the colored races in the tropical lands grow civilized enough to secure some sort of equality, or before the white races become sufficiently acclimatized to labor there. There is, moreover, no present sign that the whites will try to acclimatize themselves in such lands, for the fact that unskilled labor is now performed by the colored people degrades such labor in the eyes of the whites.

The circumstances of different tropical countries differ widely, and so also must the remedies differ which may be suggested for the evils described. Only one remedy can be said to be of universal application. It is that of treating the inferior races with justice and humanity.

Some Mercantile Pin-Pricks

BY ALGERNON WARREN IN CHAMBERS'S JOURNAL.

We are here treated to a day's experience with Mr. Gregson, an imaginary merchant. Several interesting characters are introduced, a successful traveler, a would-be sharp merchant, a golf-playing employe, a man with a friend and other familiar personages in the business world. The little foibles of these people are neatly shown up.

"IS that all you want, sir? Goods by the usual route, I suppose?"

"Yes," answered Mr. Gregson to the commercial traveller, who, after booking his order, had taken the precaution to read it out to him, so as to make sure that each entry was correct. In this particular instance it had been a pleasure to the merchant to dictate it; for he knew that what the other said he meant, and that, unlike some of his kind, he was not the sort of man to impose upon him by means of specious assertions with a

view to working off superfluous stock in total disregard of the buyer's interests.

"By-the-bye, Jones," he added, "how are you getting on with my neighbour, young Green?"

"Oh, sir, he is too clever in the wrong place, too foxy altogether to suit me. Always tries to beat one down, and cuts his own throat sometimes. Why, sir, when I was here last journey you know what a state the seal-oil market was in. Now I told him, 'Mr. Green, the market's

moving; here's my to-day's price for ten tons. I can't hold it over—not for twenty-four hours.' Well, he said he'd take the ten if I'd come down fifteen shillings a ton. 'No,' I said; 'can't do it, sir.' Then he said he thought he could do better, and he wouldn't give his order. Well, as you may remember, the next day the price was up a shilling a hundredweight. Then he wires to our firm to send him on ten tons. We weren't such fools, and wired back that we could only execute his order at the advanced figure. Well, although he was right out, he wouldn't close then and there, but wrote asking us to split the difference. By the time we got his letter there was a further rise on market, and it ended in his having to pay fifteen pounds more for his little lot than he would have had to give if he had closed at once with my first offer. You see, sir, he's one of those fellows that always think you've got some special motive when you say it's a good time to buy. He wouldn't believe me, you see, and went trying elsewhere, and so got landed. There's lots like him, sir, so sharp that they cut themselves. He got himself disliked on the road for that. When the old man was alive he sent this young one out 'to learn the ropes;' but he wasn't a bit of good, so I've heard."

"Talked too much of himself, I suppose?"

"That's it, sir—just what he always did; regularly spoilt his chances. I was just beginning to travel when his father was about leaving off; and I can tell you, sir, the old gentleman—well, he wasn't so very old then, but getting on a bit—was a much tougher customer to have working against you than the young one. Kept

his mouth shut and his ears open, and went head. By giving others a chance to talk, he got a pretty shrewd idea when a man was beginning to get a bit "dicky." But that young my-lord made a thumping big bad debt the very last journey he took.

"Well, of course, if he gave himself airs he wouldn't get on."

"Quite so, sir. Well, good-morning to you, sir." And with that, this capable 'commercial' departed, knowing better than to spin out chat in business hours and run the risk thereby of wearing out his welcome. Mr. Gregson was just beginning to give attention to a rather intricate form of tender for goods which he had been asked to send in, when one of his senior clerks tapped and entered with a request to be spared if convenient on the following Monday.

"Anything very particular, Mr. Snetham? You know we are close on a time when we are likely to be particularly busy."

"Our club has a golf tournament, sir, beginning on Saturday at one, and it's to last two days, and I want to enter."

"Can't they manage these affairs by having them on two or three Saturday afternoons running, instead of taking up whole working days for them?"

"Well, sir, they don't come very often."

"Really, Mr. Snetham, I like my people to get a reasonable amount of pleasure; but, as you know, the length of the regular summer holiday has been increased for every one of you, and if you seniors come asking for extra days for sport I am afraid it will have an unsettling effect on the juniors. Some of them are none too ready to stick to it as it is. The

last two hours' work on a Saturday morning does'nt amount to much with them. I notice, if I happen to step into the outer office of a Saturday, that the railway time-table is pretty sure to be out of its place, and I know that it isn't in my interests that it is being referred to. However, that's not the case with you, and you can have your leave for the Monday; only, I warn you that if I find the business suffering from this continual asking for extra days off I shall have to make a hard-and-fast rule prohibiting them."

"There!" soliquised Mr. Gregson after the other had retired, "twenty years ago if a man of eight and forty as so like Snetham had come in to ask for a holiday for such a purpose his employer would, as likely as not, have recommended him to take himself off altogether. Clerks get more holidays than principals nowadays. Leave wouldn't be so much grudged to them, perhaps, if they hadn't such a knack of asking for it in busy seasons, and the seniors seem to have caught the tone from the lads. Talk about old heads on young shoulders; it is the other way about at present! What with veteran cricket and golf champions forty-five seems to be about the same of friskiness."

The merchant now found it expedient to repair to the commercial sale-rooms to note some latest market reports. Just at the entrance he encountered some of his business friends with a youth whom the other introduced as his son who had just begun work in the city. The three entered the building together and saw a knot of men crowding about a notice board. "Hope nothing's gone wrong," said the parent, seeing more and more pressing up towards it. But

when they got near enough to read they found that the excitement arose out of a cricket bulletin—namely, "Visitors all out for 156. County eleven, 48 for 3 wickets."

"There, Gregson!" said the father when his son had moved out of hearing—"there's a thing for my boy to see the very first time I bring him in here. His chief fault is that his mind is a bit too set on games. I've been telling him that he's got to earn his bread-and-butter, and that if he wants to be able to afford to play he must stick to work; and now, what is the youngster to think when I take him to a place supposed to be established for business convenience, and the first thing he sees there is a lot of men bustling as if their lives depended on it to read a cricket notice? Talk about all work; it's all shirk and go play nowadays!"

"Well," said Mr. Gregson, "you wouldn't like your boy to have quite so close a sticking-time to business as you had; though I must say I'm inclined to agree with you."

"Perhaps not; but competition is getting keener and keener, and it is not altogether a question of 'like.' It is 'must' to an extent, if he is to do any good, what with the foreigner always trying to creep in. That is the great fault of our public schools in my opinion. They don't impress this sufficiently."

"And you sent your son to one of them, if I remember rightly."

"I know I did. I've seen what a capital moral tone there generally is about them, and what plucky, manly fellows they turn out. But the worst of it is that the masters in these big schools seem inclined, for the most part, to fight shy of pointing out continually to the boys that a large

number of them will have to work hard to earn their daily bread. So, when they pitchforked into commercial life without any preliminary insight, many of them kick at the drudgery of the details they's got to master, and get restless. They ought to have the dignity of commerce instilled into them from the first, and how we're going to do it for them I don't know, when they come and see these "sport notices" stuck up as prominently as they possibly can be in a business place of resort, causing as much commotion as if they notified a heavy drop in Consols or a serious accident with considerable loss of life."

"I'm afraid you will find yourself in the minority if you raise an objection."

"Oh, yes! I know I should. It infects the whole atmosphere, does this present athletic craze, and we who merely protest against such extremes are called selfish money-grubbing fossils, who, because we don't care for sport ourselves, do not want any one else to. Well, Gregson, some of them will see the folly of it when it's too late. You and I were keen enough about volunteering in our time, and put our backs into it when we were at it. But we didn't clamor about it in business hours. No; and for the matter of that, we didn't run sport into the Sunday in the way it's done now. Seems to me in this age of enlightenment that the Englishman thinks that his chance of salvation depends mainly on the size of his bath-sponge. Good-bye; I've got a meeting on and must be off."

Mr. Gregson noted the announcements of market changes, had some business conversation, and was preparing to leave, when he was hailed with "I say Mr. Gregson! just a

moment if you please." He turned and saw a Mr. Jenkins, with whom he was anything but intimate, although periodically thrown into his company through common commercial interests. He was accompanied by a young man who wore that too obsequious smile so annoying to many because they feel sure that its wearer is about to solicit a favor of them. "Allow me to introduce my wife's younger brother to you. He has just taken an agency for goods in your line, and I hope you will be able to give him a turn. When will it be convenient for him to look in on you at your office?"

Had Mr. Gregson been in the habit of thinking aloud his immediate utterance would have been, "When I am out of it." All he could do in self-defence was to say that the buying of the establishment was customarily conducted between certain hours, but that there was always a good deal of pressure on his time.

"Oh, Jack, here won't mind even if he has to wait a minute or two. He shall come and see you to-morrow. I knew you wouldn't object to my taking this opportunity of saying a word for him."

"Then you know me better than I know myself," was Mr. Gregson's inward reflection. "Now, I shall have to spend time to no purpose in listening to this young fellow, who evidently is not up to his work, or he wouldn't let another speak for him in this way without saying a word to the purpose himself. These agencies are a frightful nuisance when are taken up by youngsters who haven't had a proper business training, and who come offering goods without understanding how to do it, or knowing what facts ought to be ascertained before hand."

He got back to his office, and was immediately presented with a note marked, "Bearer to wait answer." On opening it he found that it contained an invoice sent two days before by Gregson and Company for some ten shillings' worth of a certain kind of oil supplied to a neighboring wholesale firm; also, a produce broker's circular and the following letter.

"Gentlemen,—Will you be good enough to send us a corrected invoice herewith? You will see by the accompanying price list that you have charged us much in excess of the proper value. We want to do as much as we can with you, but must ask you to put us on the best possible terms as regards price.—Yours, etc."

"Well," muttered Mr. Gregson angrily, "of all the unconscionable people I ever met with in business, I do think these are about the worst. They, a wholesale firm, employing a hundred hands at the least, send us an order for a quantity of oil which any respectable retailer would think miserably petty, and then have the assurance to ask us to charge it at or about the value of the article when sold in two-ton lots and upwards!—Johnson!"

"Sir."

"Just look at this. Haven't these people been asking for a good many quotations from us of late?"

"Oh yes, sir; but they have not ordered anything worth having for some time past. I was referring to their account last week, and they haven't had five pounds' worth in the last quarter, and yet I see by the 'quotation-book' that they have asked for special prices at least six times within the last two months. They never order ten shillings' worth of

oil without coming to ask the figure beforehand, sir."

"Had they asked the price before they sent us the order for the peddling quantity on this invoice?"

"Yes, they had, sir, and were charged in accordance with the quantity scale quoted by them."

"Well, I suppose they are too hopelessly thick-skinned to care if we deprecate their conduct in giving us so much trouble with their small orders. Let them be written to saying that they have been charged as quoted, and return them that circular which they know as well as we do contains prices for bulk quantities only. It's from one of those greedy German firms who are always giving annoyance by scattering their price currents broadcast so that these fall into the hands of men who don't buy a tithe of the quantities for which the figures are quoted, and who, nevertheless, are always ready to badger us by comparing these quotations for large lots with our charges for the petty amounts that they buy of us; and they add insult to injury by their confounded tone of patronage, saying that they want to do as much with us as they can. It would serve them right to show them up in a trade journal."

Further reflections were interrupted by his being told that the junior partner of a competing wholesale establishment was waiting to see him personally to get a special price. This firm perpetually made not over-scrupulous efforts to secure some of the trade of Gregson and Company, and he knew that the chances were twenty to one that the inquiry on this occasion would not be bona-fide. He first glanced around his office carefully to make sure that there was

nothing lying about which he should not care to have seen by eyes which former experience had taught him were particularly prying, covered over some correspondence on his desk, and then ordered that the party should be shown in.

He entered, and any keen observer of human nature would have commended Mr. Gregson for his caution. There was a look of cunning about the other which could not fail to be particularly repugnant to any straightforward business man.

"Can you give us a special quotation for best refined colza-oil, Mr. Gregson?"

"What quantity do you want a price for, sir?"

"That depends on how favorably you can offer us," was the evasive answer.

"Here is our scale price," said Mr. Gregson, passing him a list of figures.

"Oh, but won't you go a bit under these for us?"

"Those are our prices, sir, to any one who takes the quantities specified."

"I don't think you are sticking quite close to these quotations, Mr. Gregson. Our traveller in the west of England tells us that customers there say you are offering small lots at lower figures than you quote here."

"Indeed!" was all Mr. Gregson's disgusted comment. As he had anticipated, this unscrupulous competitor had no intention of buying from him, but merely wished to ascertain his selling prices so as to underquote him if possible.

"Then, I suppose, Mr. Gregson, we can tell our traveller that our customers have made some mistake, and

that these are the very lowest prices at which you are selling."

"I understand, sir, that you wanted to see me about a special quotation for yourselves."

"Well, we've got a stock at present, but might perhaps have been open to buy more if you could have quoted us specially low."

"That's a lie, and you know it," was his auditor's mental reflection; "and it's you and the like of you that spoil honest trade by your dirty sharp practices." Long experience, however, had taught him that, if he did not want to listen to a string of prevarications, he had better say as little as possible in a case like this. So he looked the other straight in the face and said, "Well, good-morning, sir. If we find ourselves later on able to quote you to better advantage we will do so."

The young man was acute enough to see that Mr. Gregson was not going to commit himself. He had hoped to wring out an asseveration from him, and thereby pin him to a definite statement that he was not going to deviate under any consideration from the selling prices which he had indicated so long as the market value remained unaltered. Then, on the strength of this, the young man would have written to his own traveller straightway, saying: "Messrs. Gregson & Company's definite lowest figures are so-and-so; you can offer at a fraction lower to customers of theirs who don't deal with us at present." He was nowise abashed at the imputation that he had not come with a real desire to purchase. This, he thought, was rather a compliment to his sharpness than otherwise. Nor did he take exception to Mr. Gregson's

bidding him good-morning as a suggestion that he wanted to be rid of him. He went out as jauntily as he had come in, prepared to try it on again when opportunity should present itself. As soon as he was gone the merchant turned again to his uncompleted form of tender, the filling in of which these unwelcome inter-

ruptions had hindered. As he did so he bethought himself, "We need something else badly in business besides the passing of the Prevention of Corruption Bill, and that is the universal commercial boycotting of fellows like that. Nothing short of it will drive a particle of conscience into them."

Edison's Plan of Life

HERALD MAGAZINE.

Too busy to sleep more than three hours a day, too busy to eat more than suffices to nourish him, Edison, the wizard, leads a life of healthy and happy activity. His plan of life is regular, the most important part of his work being accomplished at night. The result of his labor can best be estimated by a survey of the Edison department in the Patent Office at Washington, where over 300 inventions are credited to him.

"**W**ORK too hard? Bosh! The healthy man can't work too hard or too much. It isn't work, but sleep and food, that kills men."

So spoke Thomas A. Edison, the inventor. Give him a spoonful of peas, or a cracker, and three hours' sleep, and he can do a day's work equal to almost three of the ordinary brand. He just doesn't have time to sleep.

And yet he considers his life a quiet, peaceful one, and finds time to exclaim at the hurry and bustle of modern life. Here is how he describes New York:

"New York? It is the epitome of the horror of the age. I hate it. I loathe its artificial way of living, its mannerisms, its ways of thought. It has but the one redeeming feature—that it is getting so impossible that people must leave it or become crazy.

"A man in New York gets down to his office at 9, works until 12 or 1, goes out, takes a couple of cocktails, eats a hearty lunch hurriedly, goes back to his desk and works until 5,

hurries up town, stopping for a drink or two, goes out somewhere, eats an enormous dinner, goes to the theatre and supper afterward, and finally tumbles into bed.

"That is the type of man who says to me: 'I don't see how you stand the strain of working the way you do, day after day and night after night, in the laboratory.' Work? Why, my work is play compared to his. And yet I am here on the average from 8 in the morning until 10 at night, but I am shut out from the world, the work is interesting, there is none of the terrible strain that comes from work in the city."

But now and then he does a stunt himself that would place the metropolitan business man in an insane asylum.

"The longest time I ever worked continuously was five days and five nights without sleep. That was during some of the lighting experiments. Before the opening of the Pearl street station I had to work four days and nights on a stretch. You see, we didn't know just what would happen

when we turned on the current. Everybody said it was going to be a failure, and naturally I felt anxious."

He was asked what effect loss of sleep had upon him.

"None at all," he answered. "I have always been able to drop down and sleep anywhere when I had the time. I feel absolutely no ill effects from long periods of work. People sleep too much. Three or four hours is enough for any man.

"People who talk of insomania make me tired. A man came to me once who was troubled that way. I offered to cure him. He took me up. I put him to work on a mercury pump and told him to finish it at a certain time. He was just the man I had been looking for; one who would not need to stop for sleep. At the end of the third day I found the pump all broken to pieces and my friend sound asleep on the ruins.

"Sleep is a habit; if the sun should keep right on shining through the night people would get over it."

Yes, the great reason why Edison despises sleep is because he is too busy to enjoy it. He looks upon it, save for the three hours, as a luxury not to be thought of by a man with work to do. The same is true of his food. He takes just enough for nourishment, and that is all. Good dinners are for those with not much else to do but to eat them. The same is true of feather beds. One day he accepted the invitation of a friend who lived "in a sort of castle."

"Lord," he said, "I was miserable all the time. First we sat down to a table that had too much of everything, including silverware and fancy glasses. Couldn't eat anything. That night when I went up to my room a valet came up to undress me. Kicked him out. Whenever I feel that I am too old to undress myself I want to

lie down and die. I took off my clothes and tumbled into bed—and almost lost my life. It was a big feather thing, and it came near smothering me. I pulled it off and slept on the mattress."

And what has he to show for all this life of hard work and self denial? In the first place, he has made more inventions than any other living man. In the patent office at Washington there is a department marked Edison where an array of over 300 patents are to be found. Those who see this exclaim: "Oh, Edison can't last much longer. He is working himself to death." And yet every year finds additions.

"Mr. Edison's work as an inventor," said Mr. Dyer, who has charge of the legal department of the Edison laboratory, "as shown by the records in my office, extends over a most varied field. In addition to his better known patents granted in connection with the development of the electric lamp, the phonograph, telegraph, telephone, ore-milling machinery and storage batteries, I find that the inventions include vote recorders, typewriters, electric pens, vocal engines, addressing machines, methods of preserving fruit, cast-iron manufacture, wire-drawing, electric locomotives, moving picture machines, the making of plate glass, compressed air apparatus, and many others.

"In the line of phonographs he has secured 101 patents, on storage batteries 20 patents, on electric motors 20 patents, on telegraphs 147 patents, on telephones 32 patents, on electric lights 169 patents, on dynamos 97 patents and on ore-milling machinery 53 patents. When it is remembered that an incandescent lamp consists simply of a carbon filament in an exhausted glass globe, the ingenuity in devising 169 different patentable

modifications and improvements on such devices appears really marvelous."

Edison's daily routine of work is something like this:

At 10 a.m. he starts for his office, where for about two hours he is intensely occupied in attending with his private secretary to the mass of correspondence piling in upon him at the rate oftentimes of over 200 letters a day. After disposing of his correspondence he devotes his time to a perusal of the numerous papers, pamphlets, documents and books, scientific and otherwise, that come to him from all parts of the world. He reads with great rapidity, and yet with astonishing thoroughness, as days afterward he recalls what he has been over.

By 2 p.m. he is in his laboratory reviewing the results of the experiments and work of his assistants performed in his absence. Consultations with his chief assistant next occupy him for a considerable time. After this is over he may be said to be fairly in the midst of his labor of love. A recital of the experiments he daily tries, the plans he devises and the suggestions he offers would seem exaggerated were it not that hundreds of record books in his laboratory bearing the marks of his labor attest the same with unimpeachable accuracy.

The majority of days his meals are served him at his work. The hard labor of the inventor, however, begins after dark. The work of the day is more of a preliminary character—a getting ready for the herculean efforts that one by one grow and develop, until they finally reach as a whole a perfected invention.

The midnight lunch is a striking feature of the laboratory life. At 12 o'clock every night two men and a

dog enter the laboratory laden down with baskets of edibles from a neighboring caterer. The dog, a huge Newfoundland, plays as important a part in the performance as his biped companions, for, with a lighted lantern hanging from his mouth, he leads the way from over the railroad track and across the fields to the abode of the wizard. He also assists at times by having strapped to his back a basket or can containing some of the lunch. The repast without the dog to participate would be barren. He seems to know his standing, and he is always to be found at his post of duty. Mr. Edison himself, however, eats little.

Around the lunch table gather the inventor and his assistants, and as the good things disappear they discuss the day's work, tell stories and gossip generally. A freer or gayer set could scarcely be found. The jovial good nature of the chief spreads to all, and fun and fancy reign supreme. After lunch once more begins the work of science, and continues until, one by one, the assistants drop off to sleep. A few retire to their homes; the larger number, however, follow the plan of the leader and utilize their benches for beds. Edison himself gives in generally about 4 a.m., selecting some unoccupied spot, where with his coat for a pillow, he sleeps soundly sometimes until 10 o'clock, other times until 6, for his time of rising varies.

Mr. Edison has, however, a good wife, who takes the greatest care of him. But for her watchful eyes there is no telling what would happen to him. Mr. Edison is so absent-minded when engrossed in his work that he apparently loses all count of time, and but for Mrs. Edison would probably work on until he dropped from sheer exhaustion. When he has some

particularly hard problem to work out it is difficult to get him to leave his laboratory at East Orange. His meals are brought in to him, and he insists on sleeping on a "shakedown" in his private office. Mr. Edison has become so interested in his life's work that even when away from home—on pleasure bent, as it were—he still has his mind upon it.

The ancestors of the great inventor for generations back have been renowned for remarkable longevity. The inventor's grandfather, Samuel Edison, died at the age of 103 years. He had a brother, Thomas, who died at the age of 101 years by an accident, having been accidentally shot by his gun going off while he was out hunting. The oldest of the ancestry, however, was the inventor's great-grandmother, Mrs. Elizabeth Ogden, who departed this life at the age of 107 years.

Day after day Edison plods along his busy life, amusing himself by working the full limit of his capacity;

too busy to sleep, almost too busy to eat. And some one said that when death, in the end, should call for him, he would motion him away with a sweep of his big hand, muttering, "Call again. Too busy."

And yet Mr. Edison realizes that he is growing old. He was once asked the question :

"Can you not invent something that will keep us ever young and fair?"

The wizard nodded wisely. "It may come," he said, "it may come; not in my time, not yet; but why not?"

"How? By the sacrifice of animal life. By serums that will replace worn-out tissues. With it should come, however, the mental change, for when a man has seen all, has worked and played and suffered and has reached the life limit, he is usually ready to go. I know my father at 94 was reconciled and—

"Well, I shall be ready, too, but," the eyes grew introspective, "it would be interesting to know if life ever will be indefinitely prolonged."

The Success of James M. Barrie

BY E. M. D. IN THE CRITIC.

When the author of "The Little Minister," "Peter Pan" and other delightful stories and plays began his career, it was with the intention of becoming a critic and biographer. Soon finding that his abilities did not lie in that direction, he turned his attention to creative work with the utmost success. Amusing anecdotes of his blissful ignorance of finance make the article very entertaining.

FEW men upon whose work public favor has so firmly set its stamp are as fond of discussing his failures as is Mr. Barrie. It is not of his power as a dramatist, nor of his potent charm as a novelist, that he loves to talk, but rather of the blind contrariety of fate in refusing to qualify him for the special labors after which his boyish soul yearned. What he wished and planned to be

in the old days of plain living and high thinking at Edinburgh University was a critic and biographer. There was to be no place for the creator in the scheme of life as he laid it down for himself. This most fecund of artists proposed rather to sit in solemn judgment upon the achievements of others. With this end in view, his first serious essay into the paths of literature was to

prepare a ponderous study of a certain well-known character, and then after six hard months of stress and strain to consign every single page of manuscript to the flames. For even then fastidious to the last degree he needed no editor's blue pencil to spell failure. His own exacting taste condemned the work and let it die stillborn. But though biographies burn, bread must be earned, and to keep the wolf from becoming too noisy those brief delicious sketches were sent to the *St. James's Gazette*, beginning with "*Auld Licht Idylls*," whose popularity soon started Mr. Barrie on the road of glittering fortune.

And speaking of fortune reminds one of the extremely rudimentary ideas of business that are entertained by an author who automatically coins money. When his career was just beginning in London and checks from publishers were the rarest of blessings, Mr. Barrie begged a friend who was also a brother Scot, to take charge of his small earnings, and give him money only as he needed it. The big northerner consented and for a year or more was purse-bearer, safe deposit, and paying teller all in one, to his chum. But a little later on, when the figures on the checks doubled and trebled in active style, the brother Scot began to worry. He declared the responsibility was getting beyond him, and after infinite coaxing he finally persuaded young Barrie to go to a well-known bank, and at least to try and manage his money in the orthodox way. Knowing the directors, some of whom were present that morning, the friend introduced the author, who, solemn and round-eyed, obeyed orders but said never a word. He paid in a sheaf of fat drafts, was given a pass book, put

through all the formulas and was finally asked in genial fashion by the white-haired bank president if he would not like some money. Barrie nodded, and still under instructions and preternaturally silent, he filled out a check, handed it across the counter, shook his head when offered paper money, and received ten golden sovereigns in return. 'There were handshakings and good wishes exchanged, then finally the outer door swung to, and Barrie, his face a burst of sunshine, clapped his pocket and exclaimed, "Well, old man, I did them that time!"

"Did who? What on earth are you talking about, Jimmie?" inquired the tall Highlander.

"Why the way I got into them," was the reply. "I shove the man a mean little scrap of paper, the man gives me a jolly handful of gold. I tell you it's great! It's the easiest way of making money that ever I struck. I say give me a bank, a bank first and last and always."

But this incident took place a long while ago, and since then the author's financial affairs have passed into as competent hands as any in England. When Mr. Barrie married Miss Mary Ansell, the pretty actress in Mr. Toole's Company, he acquired a helpmate indeed. Though Miss Ansell had made a hit as leading lady in her future husband's first play, entitled "*Walker, London*," she left the boards without one backward glance of regret. And almost immediately did she lift all the burden of material cares from her husband's shoulders. Even those open-handed institutions the banks, with their fairy-like transubstantiation of paper into gold, knew him no more. Though to-day his yearly income from novels and plays has reached really splendid

proportions, he has none of the sordid weight of riches to bear. Country places and motor cars are supplied to him as by magic, for he has merely to wish for such blessings and they are his. Which reminds one that Mrs. Barrie herself is an artist to her finger-tips with manifestations of the gift in more ways than one. Even flowers take on a new beauty under her graceful touch, and were she not the wife of one of the wealthiest of playwrights, could herself earn a tidy fortune as either a house decorator or designer of art gowns. Both upholstery and dress-making are small passions in a way, when she is not busy investing money or laying out gardens. In fact Mrs. Barrie actually cuts and makes every costume she wears, and some of them are creations of genuine talent. With a natural eye for stuffs, combinations of color, and the grace of line, she always has a vast deal of sewing and millinery work on hand.

But it was when the Barries were looking for a country place that this lady showed a positive genius for bargains. In a big touring car the novelist and his wife scoured the home counties for a suitable spot. The search was long and arduous, and at last, to the shocked surprise of all their friends, Mrs. Barrie decided upon a residence near Farnham in Surrey, the establishment of a retired draper, as dry goods merchants are called in England. It was a very abomination of desolation. The interior was plushy to the smothering point, a tangle of fish-net draperies, velvet-covered and fringed stair-balustrades, flaming wall papers, and scroll-work over mantels. And if the house was hideous the grounds were certainly a degree uglier. But, possessing the rare gift of imagina-

tion, the lady closed with an offer for the place, and while her husband returned to Lancaster Gate and work she set about transforming their new property. And such marvellous results as were finally achieved! Out of a welter of brummagem vulgarity rose Black Lake Cottage of to-day, one of the most perfect little estates in England. But if the house is charming, the garden is a romantic bit of paradise, with its old-fashioned stocks, gillyflowers, love-in-a-mist, and hollyhocks, that are a positive joy throughout the Summer. Some declare that this change from a draper's dream to an artist's inspiration is little short of miraculous, and Black Lake Cottage is the envy of visitors from far and near.

Yet notwithstanding the manifold excellences of his country home, it is doubtful whether it can ever rival the attractions of Kensington Gardens that lie just across the road from Mr. Barrie's town house. For it is under the wide-spreading trees of the royal park that he puts in his best playtime. Positively adoring children, Mr. Barrie has collected a few choice spirits of tender years with whom he foregathers in the gardens every fine afternoon. There they played out the story of "The Little White Bird" long before that delightful novel was ever written. Peter Pan, with his Indians, his underground house, his pirates and darling Tinkle Bell were old friends of the boys and girls who spent hours with their grown-up playfellow under Kensington's venerable oaks. No question of age ever arises, for the charm of this unique coterie is that every one is on a perfect equality, taking his or her turn in spinning yarns, exchanging confidences, inventing games, and playing make-

believes. First-night triumphs pale before the pleasures of these park gatherings, and it is doubtful whether any one really knows Mr. Barrie as well as these small friends of his. They undoubtedly supply many an inspiration for the worker, who prizes as highly as Lewis Carroll used to do the companionship of little folk. Unlike many of his craft, Mr. Barrie seems inexpressibly bored when either his novels or his plays are the subject of conversation. Of course when in process of creation

the labor in hand engrosses all his thoughts, but a play once staged and set going, he appears to positively loathe it. The single exception to this eccentric attitude is "The Admirable Crichton," to which he actually went a second time and expressed himself as tolerably satisfied with the result. Again and again has he been taken to task for the last act of "Crichton," but he valiantly insists that in no other way could the stupidities of social classifications be so clearly exposed.

The Humorous Side of an Ocean Voyage

BY GEORGE ADE IN HERALD MAGAZINE.

Mark Twain has a worthy understudy in George Ade, whose sense of humor is of the same irresistibly funny character. He has just set out on a trip to Europe, and he is giving his friends in America the benefit of his experiences. That they were extremely ludicrous, those will confess who dip into the following narrative of his voyage across the Atlantic.

A MONTH before sailing I visited the floating skyscraper which was to bear us away. It was hitched to a dock in Hoboken, and it reminded me of a St. Bernard dog tied by a silken thread. It was the biggest skiff afloat, with an observatory on the roof and covered porches running all the way around. It was a very large boat. After inspecting the boat and approving of it, I selected a room with southern exposure. Later on, when we sailed, the noble craft backed into the river and turned round before heading for the Old World, and I found myself on the north side of the ship, with nothing coming in at the porthole except a current of cold air direct from Labrador.

This room was on the starboard or port side of the ship—I forget which. After traveling nearly one million miles, more or less, by steamer I am still unable to tell which is starboard

and which is port. I can tell time by the ship's bell if you let me use a pencil, but "starboard" means nothing to me. In order to make it clear to the reader, I will say that the room was on the "haw" side of the boat. I thought I was getting the "gee" side as the vessel lay at the dock, but I forgot that it had to turn around in order to start for Europe, and I found myself "haw." I complained to one of the officers and said that I had engaged a stateroom with southern exposure. He said they couldn't back up all the way across the Atlantic just to give me the sunny side of the boat. This closed the incident. He did explain, however, that if I remained in the ship and went back with them I would have southern exposure all the way home.

The unexpected manner in which the boat turned around has suggested to me a scheme for a revolving apartment house. The building will be set

on gigantic casters and will revolve slowly, so that every apartment will have a southern exposure at certain hours of the day, to say nothing of the advantage of getting a new view every few minutes. It is well known that apartments with southern exposure and overlooking the boulevard command a double rental. When every apartment may have a southern exposure and face the main thoroughfare, think of the tremendous increase in revenues! I explained my scheme for a revolving apartment house to a gentleman from Saint Joe, Mo., whom I met in the smoking room, and he has agreed to give it financial backing.

Our ship was the latest thing out. To say that it was about seven hundred feet long and nearly sixty feet beam and 42,000 tons displacement does not give a graphic idea of its huge proportions. A New Yorker might understand if told that this ship stood on end, would be about as tall as two Flatiron buildings spliced end to end.

Out in Indiana this comparison was unavailing, as few of the residents have seen the Flatiron Building and only a small percentage of them have any desire to see it. So when a Hoosier acquaintance asked me something about the ship I led him out into Main street and told him that it would reach from the railroad to the Presbyterian church. He looked down street at the depot and then he looked up street at the distant Presbyterian church, and then he looked at me and walked away. Every statement that I make in my native town is received with doubt. People have mistrusted me ever since I came home years ago and announced that I was working.

Evidently he repeated what I had

said, for in a few minutes another resident came up and casually asked me something about the ship and wanted to know how long she was. I repeated the Presbyterian church story. He merely remarked "I thought 'Bill' was lyin' to me," and then went his way.

The chief wonder of our new liner (for all of us had a proprietary interest the moment we came aboard) was the system of elevators. Just think of it! Elevators gliding up and down between decks the same as in a modern office building. Very few passengers used the elevators, but it gave us something to talk about on board ship and it would give us something to blow about after we had returned home.

Outside of the cage stood a young German with a blonde pompadour and a jacket that came just below his shoulder blades. He was so clean he looked as if he had been scrubbed with soap and then rubbed with holystone. Every German menial on board seemed to have two guiding ambitions in life. One was to keep himself immaculate and other was to grow a U-shaped mustache, the same as the one worn by the Kaiser.

The boy in charge of the elevator would plead with people to get in and ride. Usually, unless he waylaid them, they would forget all about the new improvement and would run up and down stairs in the old fashioned manner instituted by Noah and imitated by Christopher Columbus.

This boy leads a checkered career on each voyage. When he departs from New York he is the elevator boy. As the vessel approaches Plymouth, England, he becomes the lift attendant. At Cherbourg he is transformed into a *garçon d'ascenseur*, and as the ship draws near Hamburg

he is the Aufzugsbehueter, which is an awful thing to call a mere child.

Goodness only knows what will be the ultimate result of present competition between ocean liners. As our boat was quite new and extravagantly up-to-date, perhaps some information concerning it will be of interest even to those old and hardened travelers who have been across so often that they no longer set down the run of the ship and have ceased sending pictorial post cards to their friends at home.

In the first place, a telephone in every room, connected with a central station. The passenger never uses it, because when he is a thousand miles from shore there is no one to be called up, and if he needs the steward he pushes a button. But it is there—a real German telephone, shaped like a broken pretzel, and anyone who has a telephone in his room feels that he is getting something for his money.

After two or three lessons any American can use a foreign telephone. All he has to learn is which end to put to his ear and how to keep two or three springs pressed down all the time he is talking. In America he takes down the receiver and talks into the 'phone. Elsewhere he takes the entire telephone down from a rack and holds it the same as a slide trombone.

In some of the cabins were electric hair curlers. A Cleveland man who wished to call up the adjoining cabin on the 'phone, just to see if the thing would work, put the hair curler to his ear and began talking into the dynamo. There was no response, so he pushed a button and nearly ruined his left ear. It was a natural mistake. In Europe anything attached to a wall is liable to be a telephone.

On the whole, I think our tele-

phone system is superior to that of any foreign city's. Our telephone girls have larger vocabularies, for one thing. In England the "hello" is never used. When an Englishman gathers up the ponderous contrivance and fits it gainst his head he asks: "Are you there?" If the other man answers "No" that stops the whole conversation.

Travelers throughout the world should rise up and unite in a vote of thanks to whoever it was that abolished the upper berth in the newer boats. Mahomet's coffin suspended in mid-air must have been a cheery and satisfactory bunk compared with the ordinary upper berth. Only a trained athlete can climb into one of them. The woodwork that you embrace and rub your legs against as you struggle upward is very cold. When you fall into the clammy sheets you are only about six inches from the ceiling. In the early morning the sailors scrub the deck just overhead, and you feel as if you were getting a shampoo. The aerial sarcophagus is built deep, like a trough, so that the prisoner cannot roll out during the night. It is narrow, and the man who is addicted to the habit of "spraddling" feels as if he were tied hand and foot.

In nearly all of the staterooms of the new boat there were no upper berths, and the lower ones were wide and springy—they were almost beds, and a bed on board ship is something that for years has been reserved as the special luxury of the millionaire.

We really had on board the daily paper, the gymnasium, the florist, the bureau of information, the manicure parlor and other adjuncts of sea-going that would have been regarded as fanciful dreams ten years ago. Next to the elevators the most novel feature of the new kind of liners is

the a la carte restaurant. It was on the Kaiser deck. The topmost deck was called the "Kaiser," to indicate that he ranked next to the heavenly bodies in general importance. The old names of "upper deck," "promenade deck," "main deck" and lower deck" cannot be applied to one of these new fangled monsters. Next below the Kaiser deck came the Washington deck, then the Roosevelt deck, then the Cleveland deck, then the Franklin deck, and after that a lower deck and several more that did not concern the passengers living in the upper stories.

The restaurant was forward on the Kaiser deck—a gorgeous pocket edition of Sherry's or Delmonico's in New York, the Carlton in London, or the Ritz in Paris. Formerly on

the North Atlantic, and especially during the Winter season, the only persons who dressed for dinner were misguided Englishmen, who would rather take a chance on pneumonia than violate any of their national traditions. The new type of steamer is housed in and steam heated and all the people who dined in the glittering restaurant far from the common horde of the main dining saloon were attired to the limit. The usual Hungarian orchestra played hurrah music, and what with the Swiss waiters and the candelabra, the fresh caviar and other luxuries of high living it was difficult for one to realize that he was riding on the high seas at the most inclement season of the year. It was all very Fifth avenue—even to the check.

Human Locomotives and Parlor Cars

BY PRESIDENT F. S. LUTHER.

By means of a strikingly apt simile, President Luther, of Trinity College, New York, illustrates the difference between the educated loafer and the college-trained worker with a purpose in life. Believing that every man is entitled to as much money as he can earn, he urges college men to be active and energetic in the business field, where, he believes, places are always open for them.

AN educated loafer is about as sad and as discouraging a spectacle as can be found. Education costs so much in time and money that no one has a right not to take advantage of it. The man who does not and who leaves college without putting to use—at least to some use—something that he has learned there is a good deal of a blemish on the community.

Some time since I had occasion to look up statistics relative to the expense of railway construction and I found that a parlor car costs about as much as a locomotive. Of course,

locomotives can be made at greatly varying prices, and for that matter so can parlor cars. But as a general thing the locomotive which pulls and does the work costs about the same as the car where comfort and luxury is catered to.

This struck me as a simile to use in an address I once made to the boys of the Berkeley School, in New York. I advised them to be locomotives and not parlor cars, so that when they went out into life after their studies were completed they would be the pulling factor and not the drag—be the energetic, puffing, advancing, pos-

sibly noisy locomotive rather than the easy going, indolent and fine looking parlor car.

The man who is a locomotive accomplishes something in the world's work. He is the fellow who gets ahead and has a hand in the progress of civilization. He is the man that will leave a mark behind him and who will not have lived in vain.

On the other hand the well bred, carefully-attended-to parlor car fellow will possibly be a comfort to himself and an agreeable convenience to some of his friends, but that is all. He will make no dent in history. As the boys say, he will not "get there." He will be the load which the engine fellow has to pull along to keep the world moving.

I believe in activity and hustle and strenuousness. It is the best outlook for our naturally exuberant spirits. It keeps both men and boys out of mischief. It is the drone, the indolent man, who is more than likely to do things he should not.

Very few men ever died from overwork. Worry and cocktails have killed a good many, but not work. I mean, of course, among the educated classes. The work of laboring men, that is, the severe physical strain, of course, is very frequently fatal.

I believe that every man is entitled to as much money as he can earn. If he earns it honestly and uprightly, without robbing his fellow men, I do not think the public generally would condemn him for accumulating it, no matter how vast it was. This talk about the evils of an enormous fortune, it seems to me, is directed more particularly against the men who have enormous fortunes which they did not earn, or which they took away from some one else. That is the spirit that all right thinking people condemn, the spirit which ac-

tuates one to get another man's money rather than to earn his own.

It is the pirates of high finance that the public would string up to the yardarm, but not the honest merchantman. So you see that after all it is only the spirit of fair play which is crying out against the present condition. We do not like to be robbed, and we do not like to see our neighbor robbed. The man who does it successfully is naturally the object of just indignation. If you look over the great American fortunes you will find that they have been accumulated in these two ways—by earning them honestly or by taking them from some one else.

After all the very wealthy man gets but little advantage out of his wealth. He gets his board and clothes and a place to sleep and very little besides. Even the poorest and least fortunate of men manage to get that somehow.

Mentally I have no doubt that the college man of to-day goes out when he is graduated better equipped for his life work than did the college man of twenty-five years ago. He is mentally the superior of his father. That I think we have successfully proved. Physically, however, I do not think that the college boy of to-day in general is as strong as he was a quarter of a century ago. Of course, there are exceptions to this. The young men who give themselves over to athletics develop a much superior constitution than was formerly to be found in our colleges, but they are only a few of the many.

The course of studies at the colleges is much broader, and then again attention is given to training the individual for some line of usefulness in which he is best suited. The idea is to make him well posted by an education which will do him the most

good and best equip him to earn a livelihood.

Now, there is nothing sordid about that. There is no reason why every man should not earn his living and a living for others. The better living he earns is a fair indication of his superior abilities. It is neither a crime nor a disgrace to get rich in that way. On the contrary it is a very commendable achievement. To my mind that is a part of the duty of college authorities, to steer the student's talents in the way they should go or rather in the way they should go best.

In the old days when a young man went to college to fit himself for life's work he intended to be either a minister, a doctor or a lawyer. The other men who went to college simply did it to have a collegiate hall mark stamped upon them. They had no particular or definite object in view. College meant only a sort of polishing process—a necessary expenditure of time and money to be considered a well reared gentleman. The practical side of it was thought of but very little, and in consequence the colleges turned out droves of men who were quite as much at sea as to what they were to do after they graduated as they were before they entered.

Nearly every man who graduates from college nowadays has planned out his campaign for future endeavor. He does not get his diploma and flounder around looking for something to seize upon as an occupation. He knows just exactly what he is best fitted for and how to go to work to make a success in life.

The old idea, which was quite prevalent among business men especially,

that a boy went to college to idle away four years and devote himself largely to the smoking of cigarettes or athletic sports, has almost entirely disappeared.

There are many large business concerns which will employ no one but college graduates in their offices. You would be surprised to learn that I have more applications here every year from business concerns for young men than I can possibly fill. I have a drawer full of them now. The other day, when I was in New York, the managers of two very large concerns made personal application to me for some of our boys. One was a telephone enterprise, where the manager told me he wanted six college graduates and would take no one but college graduates. He said there was great difficulty in obtaining them; that the demand was greater than the supply. He came to me, I suppose, because he was a Trinity College man himself. The other man was from a mercantile concern, and the same rule applied there, that only college men were wanted.

I am an enthusiastic admirer of the young American. I stand for him every time and I believe that the great majority of college graduates are men who "get there"—that they are locomotives. The wonderful development and the progress of this country proves that in itself. I would like to see the whole railroad system of progress made up of locomotives and leave the deadweights, the parlor cars, the men to be pulled, far behind. It was only with this idea that I made the simile. Education costs too much in both time and money not to be made use of after the man leaves college.

New York's Animal Hospitals

BY ANNA MASON IN BROADWAY MAGAZINE.

So humanitarian have we become, that even animals, fish and reptiles have hospitals to which they can be sent when sick. At the far end of the Bronx in New York, there is a unique animal hospital, where sick animals from the parks and circuses are sent for treatment. Specialists in all kinds of animal diseases give careful attention to their animal patients.

NEW YORK has more hospitals for the care of animals than any other city in the world. The time when an all-around veterinary surgeon could treat the ills of dogs, cats, horses and birds is past, for nowadays there are men who make a specialty in the study of the care of various kinds of animals.

A unique animal hospital is located at the far end of the Bronx. Practically all the sick animals from parks and circuses are treated here. In the spring of the year a good many animals that have been "conditioned" at the farm during the Winter, are exchanged for the tired animals of the parks. Animals are as much in need of a rest cure as are hard working human beings.

This farm is conducted by a New York animal dealer and it is here that the traveling show man buys most of his "fierce and fiery-eyed" lions and tigers.

The reptile department is a very interesting ward in the hospital. Many sick snakes are sent to this place for treatment. A snake is a more delicately constructed creature than a mere observer may imagine; it is subject to more diseases than any other inmate of the entire menagerie. This is accounted for by reason that a snake never becomes accustomed to captivity, and a well known zoologist declares that there never was such a thing as a tamed reptile.

During the process of skin shedding many snakes are sent to the hos-

pital; here they are put in boxes prepared especially for them.

These "shedding cages," as they are called, are lined with silk; every morning the silk is coated with sweet oil. Under the silk there is a bed of cotton, under this steam pipes are laid; these keep the box at a certain temperature so that the snake may not catch cold.

In captivity a snake catches cold and dies, while in his native surroundings he may live up to a fine old age. The oiled silk surface is very smooth, there are no corners on which the delicate new skin may be scratched or injured, and to a man who really studies snakes, a marred skin is a torture, while to the man who sells them it means a loss of about fifty dollars. The movement of the snake's body over the smooth surface, the softening effect of the oil and heat tend to make the shedding of a skin a very simple matter, while not so very long ago it was often necessary for men to assist the snake in shedding, and running a risk of tearing the new skin.

If, within a week after the new skin is exposed, it is bruised, a cancer is liable to result; this will mean death within a very short time.

A snake's tail is exceedingly delicate. One accustomed to handling snakes governs the reptile almost altogether by a pressure of the tail. If a snake becomes restless while a performer is handling it, he immediately buries his thumb nail in the end of the tail; this has a tendency to make

the snake relax, taking its strength, as it were, and the performer is quite safe. A too frequent repetition of this, however, will work the ruin of the reptile. Necrosis of the bone will set in and no amount of care will save the snake. Such a death is very slow and when such trouble is discovered the snake is immediately put into the "small showman lot" and sold for from five to ten dollars. These are the "wonderful" snakes exhibited in the side shows at the circuses; they are too sick to make a fuss, and permit themselves to be "charmed" by the hour.

Cancered mouths and decayed teeth are ordinary troubles. It is necessary to extract teeth and cauterize cancers. The superintendent of the hospital has discovered that snakes are best attracted by red, so, making a funnel of red paper, he waves it in front of the reptile until the head is raised and then slips it over the head and neck, deftly catching the snake at the base of the head; he is then enabled to work on the mouth of the most dangerous of reptiles.

If a snake could be chloroformed this would be a simple matter, but the normal temperature of a snake is so low that give it chloroform and you may make a pocketbook or belt of it the next instant.

Practically every animal in road circuses comes to the farm at least once a year. They are then treated for falling hair, bruises that may not have readily healed, and their teeth are attended to. The dentistry department is rather interesting, for there an immense amount of extracting is done.

Many times park and circus animals have corns. These are caused by their standing for so long a time first on one foot and then on the other. Not having a chance to run or walk on

rough ground they wear callouses on their feet. These are always removed.

One building in the hospital grounds is given over to the care of young animals; it is called the nursery. Here animals under a year old are kept and cared for. When they have passed this age they are assigned to their different departments, but are never sold before this time, for a baby troubles as have our own little baby troubles as do our own little ones.

So great is the fad for expensive and high bred dogs that in the past few years it has been found necessary to open a hospital for the care of aristocratic canines.

The first of these hospitals was quite an innovation, for to the general public a dog is only a dog, and most folk think it ought to be able to care for itself.

That such a place was really needed has been proved, for in the past three years eight or nine such places have been opened and are now doing a good business.

These institutions resemble more closely hospitals for the care of human beings than any of the other animal sanitariums.

Clinics are held daily, and every sick dog in town is welcome. If his owner has the price of separate treatment he must pay, but if not there is a good deal of a charitable spirit to be found. A sick dog does not have to have a pedigree before he can receive treatment; the fact that he is sick is quite enough for the doctors.

A thousand dollar dog that once may have died from unknown causes, may now be saved because science has taken him into account to a surprising degree.

Only recently a \$10,000 "beauty," with a wide muzzle, bowed legs and

an exceedingly short nose, was operated on for the removal of a tumor. At present he is resting in the convalescent ward and is being fed on all the delicacies of the market.

There are more dogs in the fever ward than in any other. They are there for the same reason many men are laid up with the gout; they are overfed, pampered, too well taken care of—for dogs.

A pet that eats candy all day long, as many lap dogs do, is certain to have a fever, so off he is sent to the hospital for a thorough dieting. Once there, he may howl his little head off for the sweets he has been used to receiving at home, but nary a candy can he coax from the doctors.

When a dog is nervous, and there are many such in the hospital, he is fed on bromides. There is a ward set aside for victims of nervous prostration, worn out by the duties of society and the rush of life in the metropolis, and these dogs lie back and take their ease with all the suavity that belongs to their aristocratic breeding.

The portion of the hospitals given over to the care of cats is also interesting. Many beautiful Angora cats are sent to the hospital to have their nails manied that their scratches may not be so deep.

Bad teeth are common to cats, and it is pitiful indeed to hear their wails as the tender tooth is being treated or extracted.

Every animal in the hospital is bathed before it can leave the hospital. This sounds easy, but like a great many other things is not half so simple an operation as it seems.

Why is a black cat always spoken of in tones of doubt? Why can't it be a grey or white cat that is an object of suspicion? Why wherever there is a black cat must there be a

disturbance? Perhaps tradition and Edgar Allan Poe may have something to do with this state of affairs.

However that may be there was a black cat in the hospital and it was about to be sent home. This feline had fallen from a sixth storey window, and had broken a few bones. Thanks to the doctors, he was mended now, but still retained a few of his original peculiarities, to wit: four toes on one foot, six on another and a little cast in his eye. All in all he was a most wondrous cat.

When the bath was ready the attendant brought the cat down stairs. He placed him in the water, whereupon the cat immediately seemed to entertain a difference of opinion from that of the men in the hospital. First he "meowed," then he scratched, then he lay very still. The doctor took courage and looked on with a certain amount of comfort, while the cat was soaped and lathered into a state of slipperiness that would do credit to a banana peel. Suddenly the cat straightened his body and then shot like a dart out of the attendant's hands; a streak of cat, soap and water flew past the attendants. As soon as they could collect their scattered senses they started in pursuit of the flying patient.

Up stairs and down, behind kennels and under them, in the kitchen and office, from garret to cellar that cat was chased. Finally he took refuge in a waste pipe, and had not one six-toed paw protruded from the pipe he might not have been discovered. As it did, he was dragged out, a quivering, snarling rebel, and a new turn in the tub left him cleaner and conquered.

Sometimes one may wait all day to hear what the "dickey bird says," and then be none the wiser. This may be because he is a sick little bird

and can do nothing but "put his head under his wing, poor thing!" There is a place in town where sick birds may be made well. It is just like a trip to the south for them, and they come home as chipper and well as you please. A bird needs a vacation just as much as a human being does. A bird hospital is a tremendously noisy place. The incessant singing of hundreds of birds and the shrill, high pitched voices, pierce the ear like a sharp lancet.

Birds suffer more from broken legs than anything else. Their slender legs are caught in the wires of the cages and in their effort to get free they snap the bone. This means the hospital; here the birds are bandaged and carefully protected from draughts. Then, too, while the leg is mending he is fed things that will improve his voice. Really after all, when a bird breaks his leg it gives him a good chance to rest.

Birds are particularly courageous; a little brown thrush had three tumors removed from its throat. They were about the size of a small hazel nut, and it would have been hardly possible to think them in so delicate a little throat. Not a single chirp of complaint did the bird give vent to, and when all was done and over he looked a pretty sick little bird with his throat all bandaged in white gauze.

In Grand street there is a hospital for fishes. There are many valuable fishes in New York owned by private individuals. When they are sick they are either sent to the Grand street hospital or the fish doctor calls at the house.

In the cellar of the fish store there

are tanks containing thousands of tiny gold fish. These fish are raised and sold to the smaller dealers. The tanks are emptied and filled with fresh stock almost every day, for the fish are shipped to all parts of the United States.

Many things can befall a fish. There is a parasite in the water that fastens itself to the scales, and rapidly breeds until the fish is literally covered with it. The fish is put into salt water and practically disinfected.

Fungus growths grow on the fins; these must be removed or they will soon kill the fish. This is a delicate operation and many times performed with a pair of small manicure scissors. It is best never to try to dip a fish's fins yourself.

Many people returning from Florida bring baby alligators with them. In the Grand Street Sanitarium there are many sick baby alligators. In the first place people do not know how to feed these curious pets; their food must be absolutely fresh and carefully prepared. Sometimes it is necessary to pry their mouths open and force finely chopped steak down their throats.

Callouses often have to be removed from the stomachs of alligators that are kept in captivity. The little fellow crawls over the floors in the house and wears a callos, which will become a corn, and should be removed at once.

It is the unnatural surrounding, the confinement to house or in a cage, that brings most of the ills to animals, in fact it is a case of too much civilization. So, just let your dog be a dog. That's all.

The Coal Trust and Its Origin

BY HARTLEY DAVIS IN EVERYBODY'S

The strike of miners recently declared in the anthracite coal districts, brings the coal trust into unenviable prominence. After careful investigation the writer of the article from which the following selection has been extracted, finds that the coal trust, though only six years old, is the most perfect of all monopolies. It controls the hard coal supply of the world, owns the railways that transport it, and holds in the hollow of its hand the dealers who distribute it.

IN a strip of land in northeastern Pennsylvania, 125 miles long and 35 miles wide—an area of 500 square miles—is the anthracite coal supply of the whole world. This country of green-clad hills, of lovely, fertile valleys, has been transformed into a Land of Perpetual Shadow. The smiling face of nature has been scarred by gaping wounds, disfigured by the huge excrescences of culm-piles.

The gold mines of the whole earth are of lesser value than the brittle carbon that some cosmic caprice once thrust beneath the surface of this narrow little stretch of mountain country. Statisticians will tell you that in 1904 the world produced a gold supply of 350 millions—but each year coal is torn from the heart of the anthracite country to the value of 360 millions. The results of a single financier's obtaining control of all the sources of the gold supply are almost beyond conjecture. Yet this is what has already happened to the coal industry, which is now under absolute one-man rule. The Gold Trust has as yet a grotesque sound to our slow-learning ears. But there openly exists a Coal Trust, and to-day our country shelters—and legally protects—no more formidable force.

A curious dispensation of nature which placed one of the world's most valuable sources of wealth where a handful of men could possess it has made of the hard coal region "a limited natural monopoly." The Coal Trust which has seized upon this great natural opportunity is an un-

limited commercial monopoly, the most nearly perfect, the most secure, that has ever existed. Its foundations are half a mile deep in the bowels of the earth. It is so firmly grounded that it has little to fear save its own greed and the remote possibility of Government ownership.

The Coal Trust is a scant half-dozen years old. Yet it owns eighty-three per cent. of the coal in the ground, and controls ninety-eight per cent.; it owns a perpetual franchise to mine and distribute; it owns the labor of thousands of men and boys; it owns the men who used to be known as "independent operators," then as "operators" merely; it owns the railroads that transport the coal; it owns the selling machinery. It decides how much coal shall be taken from the ground, where it shall be shipped and how, what the carrying charges shall be, and the selling price. It can foretell what the minimum price will be five years from now in New York or at a way station in Minnesota. The maximum price it would not predict, for that depends upon "economic conditions"; meaning, in this instance, the ability of the public to pay. Actually the trust has perfected a system whereby the price of a million tons delivered in New York or half a wagon-load sold a farmer from an elevator at a way station on the prairies of North Dakota is fixed with equal certainty and rigidity. It determines the exact profit both of the New York wholesaler and of the little retailer in the

smallest community. It knows every item of cost down to the fraction of a cent, from the mine to the consumer's coal bin. Those poor, ignorant dealers who labored under the foolish delusion that they had a right to do business as they saw fit, and who sought to augment their total profits by cutting prices to increase sales, have swiftly been shown the error of their ways. The monopoly has simply cut off their supply of coal and driven them out of business. Already this gigantic trust has taken from the people eighty millions of dollars more than could have been collected had the combination not been effective.

The Coal Trust, which owns outright more than four-fifths of all the unmined coal and controls all but two per cent. of it through the coal-purchase contracts, is made up of nine railroads that enter the anthracite coal fields. The Reading Company, a holding corporation, leases the Lehigh Valley Railroad and owns the Philadelphia & Reading Railroad and the Central Railroad of New Jersey, in addition to great operating properties like the Philadelphia Coal & Iron Company. The Reading, under the direction of George F. Baer, dominates the situation. It owns sixty-three per cent. of all the hard coal. The Delaware, Lackawanna & Western Railroad is a powerful factor in the situation. After thirty years of bitter fighting it has come into the combination, its president, W. H. Truesdale, being in perfect accord with Mr. Baer. There is a bond of union between the Reading and the Erie, which owns the New York, Susquehanna & Western and which is the third important factor in the trust, in J. Pierpont Morgan, who has enormous interests in both companies. The Pennsylvania Railroad has acted in concert with the Reading in all

hard coal matters for a quarter of a century and has never had to meet the competition the others have fought. The Delaware & Hudson, strong in its prosperity, has always been most conservatively managed, and it gladly embraced the trust plan. The New York, Ontario & Western, now owned by the New York, New Haven & Hartford Railroad, and least important of the hard coal carriers, completes the list of the immediate interests in the Coal Trust.

The concentration of the anthracite industry under a single control represents the inevitable working out of the economic forces that for half a century have been dominant in American life. It is the old story, in a new setting, of the downfall of the warring feudal barons and the rise of the central power of the king. The subjugation of the independent operators and the bringing of the railroads under a single control have made for economy, for system, and for peace, but they have vastly and dangerously increased the power of one man, George Franklin Baer, who is the centre of a powerful group.

The anthracite region was originally given over to farming. The best coal lands were the best farming lands. At first, coal was taken from the ground at comparatively little expense. Thrifty farmers turned from tilling the soil to the more profitable business of wresting the black diamonds from it. Sometimes it was only necessary to remove the surface soil to uncover great deposits, a process known as stripping. Others tunneled and took out coal from the grass roots. Men who had learned of the wealth of the region from working in the mines secured options on lands adjoining, and with these as security procured money to work them.

There were veins seventy feet thick waiting to be tapped, veins of the finest coal. It is of record that hundreds of thousands of dollars' worth were taken from an area of a few acres. In those early days the great demand was for lump coal, coal in huge pieces just as it is taken from the ground; this was used for making steel and on steamboats.

Early in the history of the industry the custom of leasing coal lands on royalty was generally favored. This was because those anxious to operate mines often lacked capital and were disinclined to buy property when they were not sure about the amount of coal available. Another reason was the thrift of the owners of the property, for leasing land on royalty seemed to insure larger returns than operating the mines. In scores of instances, landowners saved their royalties to open mines themselves, thus becoming operators; and the necessity for gaining practical knowledge with possession induced them to offer miners opportunities to come in on a partnership basis.

The great firm of Coxe Bros. & Co. which was the strongest of the independent operators and which owned its own railroad, had its foundation in the ownership of big farms under which were vast deposits of coal. The elder Coxe leased a part of his land. With an eye to the future he sent his sons to Germany for a fine technical education. On their return the sons decided that it would be far more profitable to operate mines than to lease them, and they grew into great power and wealth.

We must for a moment revert to the period when there were no railroads whatever in the anthracite field. At that time it was merely a land of farms, of forests and steep hills, and even after the wealth that lay be-

neath the surface was disclosed, it was difficult to get carriers to come into the region. The Union Canal, the first of these, was thirty-seven years in the building, and some twenty-six lottery schemes were employed to raise the necessary funds. The Delaware & Hudson Canal came next. But hard coal had developed slowly; it was difficult to educate people to the point of using it. By 1840, however, the shipments reached a million tons, and the magic of a million provoked an orgy of construction so furious that by 1847 there were no fewer than twenty common carriers in the field, with not enough coal being shipped to support half of them. And from that time dates the conflict that has continued with greater or less violence for fifty years.

No sooner did a railroad tap a field with a large output than it exacted the highest rates it could collect. This proceeding would attract a rival and there being insufficient tonnage to support two railroads, one had to be driven to the wall. Over and over again this stupid and brutal battle was fought. The enormous profit that the high tonnage rates made possible was ever an irresistible lure. Even those roads that had to meet competition were sure of rich returns. Extortion was the rule, as it is still.

The attitude of coal-carrying roads was clearly shown in the statement made by the president of the Philadelphia & Reading as far back as 1869. He told an inquiring Pennsylvania legislative committee that his road had a perfect right to charge \$2.43 a ton for a haul of ninety-three miles and that it would be justified in charging twice or three times as much if it could get it, an attitude that prevails to this day. When it is recalled that the Delaware, Lackawanna & Western during a considera-

ble period charged and collected \$2 a ton for a haul of nine miles, the claim made by the earlier financier seems modest enough.

Great financial disasters were of course during all this time the inevitable accompaniment of fortune-building. As new roads forced themselves into the field and the established ones penetrated each other's territory, they fought it out in a dog-eat-dog fashion. The weaker roads, living from hand to mouth, had to have traffic, which meant coal, for there was no other freight. The easiest way to get it was by cutting rates, starting a struggle that ended when the weaker road was forced to sell out to its rival or go into bankruptcy. Not infrequently both were made bankrupt and a third railroad gobbled them up. The victorious carrier straightway tried to recoup by demanding extortionate rates, thus inviting repetition of familiar disaster.

The consequences of this cut-throat warfare are clearly shown by the fact that of the twenty-five or thirty railroad lines entering the hard coal region, only three escaped absorption or bankruptcy, and two of the three roads which are now most powerful in the trust were themselves bankrupt a large part of the time.

Perhaps nothing can be said in defence of the course of these competing railroads except that, sportsmanlike, they consciously ran a great risk. But the operators, who played a mighty important part in these struggles and

were piling up fabulous treasures in their own private coffers, did so at no risk whatever. By no possibility could their supply, their labor, or their market fail them. No easier way of "making money," none more pusillanimously safe, could be imagined. And they were responsible to no one. Even though coal was often sold under what was believed to be the actual cost of mining and transporting it, the operator's profit was inviolate and secure. And this was brought about in the following fashion:

It was the operators' practice, at which the railroads loudly protested, to maintain an output largely in excess of the demand. It is true that the railroads, in their greed for tonnage, virtually encouraged a maximum output; but it is also true that the operators needed no such encouragement. For the substantial bulk of their profit was made from cheerful robbery of the mine workers, who were the only factor in this titanic struggle that had at this time no adequate weapons of defence. The other contestants on this grimy battle-field fought, adroitly, cruelly, for wealth and power; the mine workers fought, crudely, blindly, for life itself. It was a strife of pitiful inequalities—but the public economic conscience was then in embryo. Nobody protested that the miners were paid cruelly low wages; or that these wages were afterward dexterously withdrawn by such devices as the "company store" and the "company house."

A Young Man's Chances in Railroad Work

BY N. C. FOWLER IN WORKER'S MAGAZINE.

According to this writer and to the opinions of railway men whom he quotes, the operating department of a railroad offers the greatest opportunity for advancement. The young man who enters it should not only possess a good education, but should have some mechanical ability as well. Mr. Fowler gives useful statistics as to the remuneration in different branches of railroad work.

WITH the exception of a few presidents, who are chosen solely for their financial ability, substantially all railroad men began at the bottom or close to the bottom, and worked up. Railroading, perhaps more than any other calling, requires specific knowledge and experience. It is a special business, and the ordinary business man, successful along general lines, can not immediately adapt himself to railroad conditions.

The principal railroad officials are well paid, their salaries ranging from a few thousand dollars to as much as \$100,000 a year. This higher figure, however, has never been paid to more than a few railroad presidents. Comparatively few presidents of railroads receive less than \$5,000 a year, and \$10,000 is by no means an unusual figure; in fact, there are quite a number drawing salaries in excess of \$25,000.

The average salary enjoyed by the railroad official whose position is not relatively lower than that of the general passenger and ticket agent, is not far from \$5,000, and it is doubtful if any competent head of a responsible department ever receives less than \$1,500. Railroad clerks and other employes receive salaries similar to those paid by the regular mercantile houses. They have, up to a certain point, the same opportunity for advancement as is enjoyed by those occupying similar positions in general business. But the clerical railroad employe has little chance of

becoming a factor in the controlling ownership, as this is likely to be held by capitalists.

Success in railroading depends either upon great mechanical or disciplinary ability, or upon extraordinary business capacity. The heads and subheads of the operating department are men of unusual ability. They are specialists, possessors of mechanical skillfulness, and if in charge of many workers are natural controllers of men. They know how to work themselves, and how to direct the labors of others.

Comparatively few railroad men are promoted unless they deserve advancement. While favoritism may be in evidence occasionally, it is seldom, indeed, that a "favorite" without ability gets ahead of a person of real ability. Every operating railroad man is a specialist, and differs from the rank and file of ordinary business men. His success depends upon his ability and training along certain lines.

The boy who intends to enter the clerical side of railroading needs the same preparation as he does to take up any regular business, although some mechanical knowledge, even in the clerical department, will not come amiss. But the boy who intends to go into one of the operating departments, and this offers the greatest opportunity, needs to be equipped with a liberal and broad technical education. From the common or high school he should pass into some institute of technology, and graduate.

Promotion in the operating department is impossible without experience and a strong, rugged, broad, general technical education exhilarates experience and widens its capacity.

A well educated boy stands a many times better chance of advancement than does the boy who enters the operating department from the common school without any definite knowledge of mechanics. The successful railroad official is an educated man. It takes less time and costs less to receive education when one is in the receptive educational state than to acquire it after one has started his career.

I would not advise any boy to enter the operating side of railroading who is not naturally of a mechanical turn of mind and who is unable to obtain a thorough mechanical education. If he has no mechanical ability he will not rise much above the lower levels.

The boy, properly school trained, can absorb experience and utilize it much more quickly than one who never had a school training. But the boy with only a school training has little in the way of asset. He simply is in a position to advance more rapidly.

Railroad locomotive engineers are paid as high as \$2,000 a year, and from that the salaries grade down to \$700 and \$800 for drivers of freight and switch engines. Passenger conductors receive from \$1,000 to \$1,200 and brakemen from \$700 to \$800. Freight conductors are paid about \$850. Conductors, as a rule, begin as brakemen, this experience being extremely valuable to them. The engineer usually develops from the fireman, and most firemen start in as wipers or as roundhouse helpers.

Superintendents usually rise from some subordinate position, often the lowest. There are many of command-

ing position and of enormous capacity, who began as firemen, as workers in the roundhouse, or as mechanics in the repair shop. Ordinary mechanical ability, in the railroad business, is subject to reasonable promotion, but it is not likely to lift its possessor much above the head of a subordinate department, while extraordinary ability is pretty sure of reaping an adequate reward.

The railroad man is a man of action and a man of quick action, a man able to do in a minute, in safety, what men in other lines of work may require hours for execution. The lazy boy, even though he may be a mechanical genius, would better keep away from railroading.

To sum up, the clerical side of the railroad business offers good opportunity, but probably not so much as does the clerical side of the mercantile business. The operating department usually presents good opportunities to the boys of mechanical capacity, who are able to master their ability and to utilize it, and who, moreover, are natural workers and willing to work hard.

The slow boy has no business in the railroad business, nor has the quick boy, if his rapidity is not under the control of dependable discretion.

O. W. Ruggles, general passenger and ticket agent of the Michigan Central Railroad, says: "I would not advise a boy who contemplates making railroading his life work, and who already has selected the operating or mechanical department, to enter any other. First, because his tastes and inclination should govern his choice; and, second, because there is a wider demand now and will be in the future not only for mechanical ability and engineering talent but for men capable of handling freight—which is the chief business of the railroads—of

routing and billing over an intricate system of railroads from one part of the country to another, and capable also of dealing with the complicated question of rates, which in itself is said to rank as a profession. These duties are, of course, widely dissimilar, sometimes requiring clerical and executive ability, with a thorough knowledge of geography and of book-keeping as a foundation, and in the operating department a sound training in mechanics, coupled with an ability to handle men.

"I would not advise a boy against entering other than the mechanical or operating departments of railroad business. There are no particular disadvantages in any of the departments of railroad work, except as affected by the temperament of the young man. If he feels that he is fitted for the freight department, or for the passenger department, and is determined to make his way in the path chosen, by close application and hard study of all the conditions and problems involved, he will, in all probability, make a success of his work; but he should not select the one because he wishes to 'boss' a large number of men, or the other because he would like to wear good clothes. He will find plenty of good hard work in either position, but if he is determined to learn the business from the bottom, and overcome all obstacles, he will be almost certain to find a career which will at least give him a certain and comfortable livelihood, and may bring him both fame and fortune."

Roswell Miller, chairman of the board of directors of the Chicago, Milwaukee & St. Paul Railway, says: "The principal advantages of the railway business consist in the fact that there are not enough men in it who are capable of filling the best posi-

tions. There always is room for those who have ability enough to fill a high position. And, aside from merely clerical positions, there is something more than ordinarily interesting in the work which makes it absorbing, and success is, therefore, more likely.

"The principal disadvantages are the absorption of the individual. If he is successful he cannot do much else, day or night, week days or Sundays. So that in most cases the man who devotes himself to the railway business, and serves his company honestly, cannot at the same time acquire a large fortune, which he could do with the same amount of labor in other directions. Besides this, railroading, like many other pursuits, has many 'machine' places, which are filled by men who come to be merely machines."

W. J. Wilgus, vice-president of the New York Central & Hudson River Railroad, says: "To the young man of sound principles and good constitution, imbued with the intention to succeed the railroad offers a career that contains all of the rewards for which men can strive. There is probably no field so attractive as that of the railroad for the display of the strenuous qualities that, in less peaceful times, won success in the profession of arms. Financial returns and the honors of position are at the command of the young man of ability who is not afraid of hard work, and whose constant aim is the securing of the pleasure that comes from the accomplishment of work well done.

"The disadvantages in the field of railroading are long hours and the frequent subordination of social pleasures to the demands of duty."

J. W. Burdick, passenger traffic manager of the Delaware & Hudson Railroad Company, says: "My ad-

vice would depend upon my estimate of the boy's ability and promise. If he is made of the right stuff it is immaterial whether he enters the clerical or the operating department of a railroad. In either case, if his activities are sufficiently exercised in learning his business, he will either follow along the line of promotion or be extinguished, according to the es-

timate placed upon those activities by the management. I believe that the elements and probabilities of success are inherent in the boy himself and that the ultimate outcome is not materially influenced by the kind of work he takes up in the beginning if he is fitted by birth and education properly to perform the duties which come to his hand."

Popular Fallacies of Speculation

BY THOMAS GIBSON IN MOODY'S MAGAZINE.

In the average speculation there is a good deal of blind plunging. Very few operators put any research or reasoning into their trading, and consequently fall down. They are content to accept well-worn aphorisms, which are in reality utter fallacies.

THAT a majority of the speculators designated as "the public" lose money, is a notorious fact. They buy at the top and sell at the bottom; they make favorites of the worst stocks, and utterly neglect the best ones. They are seldom material gainers in an important advance, and are invariably losers in a collapse. The most remarkable feature of all is that they never seem to profit much by their experiences, and do not even attempt to discover why this deplorable state of affairs exists.

If a number of general traders were asked to give reasons for their repeated failures, they would probably attribute them to manipulation, lack of inside information, etc. Mere interested observers on being asked the same question gravely reply that the public loses money on account of buying at high prices; but this explanation is valueless unless accompanied with the reason why they buy at high prices.

The fact of the matter is that

most speculative losses may be traced to the absence of anything remotely resembling clear reasoning or intelligent research. The speculator begins wrong; he assumes that he must depend upon tips or chance for his success, or, worse still, forms wrong conclusions from superficial appearances or personal prejudices. The successful trader, on the other hand, goes behind appearances, and has no prejudices. He gets to the bottom of the matter. The "inside information" and manipulation on which he is popularly supposed to base his success exist largely in the imagination of unsophisticated people. True, many movements are assisted by manipulation, and some depend upon it entirely, but in most cases there is another and more solid basis than the mere operation of the machinery of the Exchange. Again, a purely speculative movement depends largely upon the mistaken attitude of the public itself.

The public must be arrayed on the wrong side: it is impossible to

manipulate successfully with no one to manipulate against. There must be money in sight.

So vague is the general understanding as to what is necessary to a successful campaign on the part of insiders, and so fixed is the idea of mystery and intricacy, that any attempt to approach the subject from a logical or analytical standpoint is usually greeted with a smile of derision, and yet the difference between the best trader and the poorest is mainly a mental one. It is not meant to say that the unsuccessful traders are incapable of clear reasoning,—some of them are capable enough, but they make no attempt to reason.

To illustrate this: At the outbreak of the late Russo-Japanese war a certain Chicago Board of Trade house with a large clientele pointed out the fact in their daily letter that this particular war was not a bull argument on wheat because "one country was an exporter and the other a non-consumer of wheat." The euphonious sentence was widely quoted as a good argument. It was simply accepted without analysis. A little reflection makes its fallacy apparent. The reduction of supply at any point is a legitimate argument for higher prices. There is that much less wheat in the world. It would be just as intelligent to state that a handful of grain could be taken from a peck measure without reducing the contents. As untenable as such reasoning appears, it is only a fair sample of the basic arguments upon which men capable of better things hazard their money.

But perhaps it will be said that the case pointed out would have deceived only the most unsophisticat-

ed; it may appear in this light because of being accompanied by an immediate exposure. Let us consider another case so well known and widely accepted as to be almost axiomatic: "Limit your losses and let your profits run," is considered an excellent motto by many traders, even experienced ones, and yet if the principle involved is subjected to a little scrutiny, it resolves itself into an inconsequential figment.

The trader who adopts this method must admit, to begin with, that he is merely gambling without any idea of what he is about. He buys or sells on the principle that if he is right he will take a large profit, and if he is wrong, he will take a small loss. A tempting proposition on its face, but founded on exactly the same basis as betting on "long shots" in a horse race.

And here a brief digression is warranted. It is probable that, guided by the suggestions offered above, many readers will be able to lay this article aside, and, by a little reflection, uncover for themselves the weakness of the "long-profit and short-loss" theory without recourse to the exposure which follows. If this is the case it is a timely and convincing proof of the contention already made that it is a lack of directed effort rather than inability which takes the speculator into crooked by-paths.

To contend that there is any inherent quality in the stock market, when considered as a mere gambling machine, which would cause it to produce one profit of ten points more frequently than ten losses of one point each, is to overthrow the entire calculus of probabilities. If such were the case, the entire problem of successful speculation would be

solved. The trader could leave certain instructions as to his operations, and go about his business with a surety of ultimate profit.

Perhaps the votaries of this method will object to so broad an application, and point out that they do not so utilize the rule, but that they employ it for purchases on the eve of a probable advance of considerable proportions. This is amusing; if an advance were probable, how ridiculous to buy at a certain point, and sell at a point where purchases are still more desirable. It would appear that if the system possessed any merit at all it would be most useful at high prices, when purchases were being made in the hope of a purely speculative advance, and losses limited as a precaution in the event of its not appearing. This view of the case may be dismissed by saying that no one has any business speculating on any such premises.

Twist the apothegm as you will, it cannot be made to conform with reason. It is one of a long series of errors which lie in the path of the speculator because of his failure to think correctly, or to dissect the statements which are offered for his edification. The numerous rules and theories which tend to supplant good reasons for purchases and sales with merely mechanical gambling systems, are one and all of exactly as much use as the systems employed by certain faro-bank players or other gamblers.

In every brokerage office may be found individuals laboriously keeping records of figures and movements for the purpose of forming charts and systems. These deluded people work hard at their compilations; they lose their money, and in some

cases the money of their friends, in pursuing an ignus fatuus. There is nothing to laugh at—it is too bad.

One of the most serious errors made by the business man who speculates occasionally is the entire misunderstanding, or one might better say, the misapplication of the word "speculation." To talk of speculating on the present is a paradox, a flat contradiction of terms, but, nevertheless, the principal reason for general public purchases at high prices is that people base their purchases on what is now self-evident, rather than on future probabilities. The publication of splendid earnings, the existence of good general conditions, and the activity of quotations at high prices attract the cliff-dwellers to the market after all the prosperity has been discounted, or more than discounted in current prices. The true speculator would foresee such a state of affairs, and buy in advance of such announcements. The point at which the public is attracted is, if anything, the place to sell, for every period of high prices will be followed in time by a period of low ones. And as the public traders buy at the top, it naturally follows that they sell at the bottom, for at low prices the signs of prosperity which incited purchasers are supplanted by blue-ness and general depression.

Thus, a great many people do not speculate at all; they merely act on what is before them, not on what the future holds.

Do you think for an instant that this ill-founded form of operations is confined to the small fry? Not at all. Good appearances bring to the market business men and bankers in great numbers.

And the semi-professional specula-

tors, that large class who year after year devote their income and capital to an unsuccessful attempt to make a permanent gain, until at length they are incapacitated or disgusted—they also suffer from incomplete and incorrect reasoning. These men pride themselves on being posted, but in most cases their knowledge is of a jug-handle sort. They are students either of values, or of technicalities, seldom of both.

To be more explicit, there are two classes of these semi-professional traders, one operating on intrinsic valuation, regardless of surrounding conditions, and the other doing just the reverse. They may be compared on the one hand with the theorist who understands the philosophy of steam, but knows nothing of the practical working of an engine, and, on the other, to the practical engineer who knows nothing of the philosophy of steam. A thorough understanding of both is essential to a high degree of proficiency.

As an illustration of the difficulties encountered by the first class, the recent movements in Steel Preferred form a good example. This stock is named merely because its movements happen to be best recollected by the general trader. The student of values bought the stock because he believed it to be cheap at 75; and so it was, but what followed? The stock subsequently sold under 50, and was, therefore, a bad speculative purchase at 75. (Investment is not here discussed.) Had the purchaser known, or taken the trouble to inform himself that the stock was largely in public, i.e., weak hands, and applied to this knowledge the reflection that it was highly improbable that any considerable advance would occur under such

circumstances, but that every means would be used to dislodge these holdings—he would have been constrained to wait, would have refrained from making his purchases until it was apparent that the public had parted with steel stocks. This period was in no way obscured from view, for after Steel Preferred had sold at 49½ and recovered to 65, there was not a brokerage office in the United States which did not have short commitments in this stock, and very few long ones. At this stage it would not require much profundity to deduce that if the public had parted with their holdings they must perforce rest in strong hands, and following this with the simple question, "What is now to be accomplished?" the correct solution would have been apparent. So far as the value of the shares was concerned, there was never a time when an intelligent investigator could have found any room to question their value. The public cried "watered stock," "ruined business," etc., without the faintest idea what they were talking about.

And the "tape-readers" are no better off. They believe that by the adoption of certain methods, and by the observation of market action they can make money speculating. A few of them succeed, but it would not be amiss to hazard a guess that even these few do not confine their operations to "tape-reading," but have good ideas of values.

Knowledge of values is absolutely essential. No amount of subsidiary knowledge will do, not even if it includes correct information as to the position of shares. The great professionals are not omnipotent; sometimes they are caught in a position which they cannot abandon. It is

not enough to know that stocks are well located, nor is it enough to know that they are cheap. It is necessary that both these things should be known.

"The ticker never lies," say the tape-readers. It lies horribly. The same appearances which mark the beginning and upward progress of a bull market are present in an exaggerated form at its culmination. So long as the tape-reader is operating with the long swing of the market he is all right, but as he never sees the top, he generally manages to get loaded up with a considerable line at high prices. And here enters an element of human weakness which is wholly unphilosophical, but very prevalent. Nine men out of ten who find themselves committed to a losing position will stubbornly refuse to alter or abandon it. They cannot, or will not, accept a loss until forced to do so, even if the reasons for their original purchases have been cancelled, or reversed. A few traders school themselves so rigidly as to overcome this defect, and are able to sell and buy regardless of profit or loss, but they are exceptions.

The "one-idea" man is another public loser. He buys his favorite commodity at a certain price, without regard to the trend of the market. It must be admitted that prices of stocks move from one extreme to the other, and that while a stock might be a good enough purchase at par on the upward swing, it would be a very poor one at the same price in a period of decline.

It is well to know what has happened in the past; in fact, it is essential, but the knowledge must be used intelligently. Complete analogy is valuable, imperfect analogy is use-

less. To know that a certain stock is in strong hands at a price below its value is a case where what happened before may be confidently expected to happen again, but to merely know that a stock is now selling as low as it sold in last year's decline is of no use whatever.

There is a general idea that the affairs of speculation are too intricate, too mysterious for solution by the ordinary mind. But this opinion is premature. There is more or less intricacy, it is true, but it is submitted that an understanding of such intricacy is necessary to success, and, furthermore, the most intricate machine appears simple enough to the man who knows all its parts and their application. If any individual honestly tries to understand the matter and fails, he should abandon ventures entirely.

There is no basis for success but knowledge. There is a false appearance of profundity about the subject considered in toto which disappears when each question is separated and examined.

It is not claimed that the matter in this article contains any individual illustrations or statements of particular value to the speculator. The object sought is to direct attention to the necessity of injecting the unusual element of reason into speculative operations, to stimulate right thinking, and to give impressiveness to the statement that each man must go to the last analysis of his subject before venturing his money.

The contention is made that not one single permanent success has ever been made speculatively through chance, through tips, or by any other method than experience and careful analysis. As to the difficulty of

reaching the necessary degree of proficiency, it is believed that there are men of sound judgment and sufficient experience operating to-day, who, by discarding the accepted fallacies bearing on the subject, obliterating

entirely the illusion of hope, and accepting nothing on faith, would find themselves, step by step, arriving at correct conclusions with a facility and accuracy which would surprise no one so much as themselves.

Secret Service in Big Hotels

PEARSON'S WEEKLY.

Every large metropolitan hotel has an elaborate criminal investigation department of its own, with a number of skilled detectives ever on the watch for suspicious characters. These detectives pose as guests of the hotel, and in many cases their identity is unknown even to the hotel's employees.

THE secret service department of a large hotel is a necessary and most important part of its organization. To a large extent, the guests are dependent upon it for the safety of their property, and even of their lives.

It is a criminal investigation department in itself, and only when all its resources have failed, or when it is absolutely necessary that the police should know of any breach of the peace or law that has been committed within the hotel's walls, are they informed and asked for assistance. Yet, despite this, the hotel secret service department works hand-in-hand with the police so far as supplying particulars of any of its visitors or residents is concerned.

Not every intelligent and educated person makes a successful spy. Added to a liking for deductive analysis, he must have the polished air of a traveled man-of-the-world, and the tact and care of a diplomat.

Consisting of at least two persons—most of the huge London hotels usually employ four, one of whom, perhaps, is a lady—the members of the secret service department may not be known to the hotel servants or even to each other.

They appear to be just ordinary guests of the hotel. Their bills of expenses are given to them, and they are paid by them as if they were merely casual sojourners. When there is little doing they hobnob with the latest arrived millionaire and the usual crowd of well-dressed men who frequent the smoking and billiard rooms of the palatial establishment.

Indeed, it is in these places, and at the most unexpected moments, that a chance word, a mere accidental action, has been the means of sending many a smooth-tongued card-sharper or a swell cracksman to a prison cell, or to hurriedly search elsewhere for quarters.

To further keep up the illusion that the members of the secret service department are nothing more than ordinary visitors, some hotels change their spies for a time. The reason for this will be explained later.

In at least one big London hotel, however, is a member of the secret service department of whose services the proprietors fear to be deprived. He is far too valuable to them.

An Artist in Uniform.

Though dressed in the ordinary uniform of an hotel porter, with an

office in the entrance hall, he is a cunning draughtsman, and not a single visitor to the hotel passes his little glass window without his features, his distinguishing characteristics, and a description of his attire are faithfully set down.

Many a rogue has been tracked by these rough, impressionistic sketches, and many a wealthy and careless person has reason to sing their praises.

There is, of course, a head to the detectives. He is in close touch with the manager, to whom all complaints and particulars of thefts are made by residents.

The chief spy, usually an elderly man with a varied and world-wide experience in the investigation of all kinds of crime, records in diaries, and index-books, particulars of these complaints, no matter how trivial. He gives all instructions to his men, advises them what course to take, and records all the details they have gathered by investigation, research, or by chance conversation or observation in the public rooms.

He, too, is in telephonic communication with his men, so that one can be aroused, if necessity demands it, in the middle of the night and dispatched upon an errand of investigation.

A Man is Known by His Luggage.

It is a rule in the secret service department that only those guests of the hotel who are known by long experience or by repute to need no careful surveillance are exempt from it. Only by such means are the interests of all guests properly protected. Until their actions or investigation proves them to be otherwise, little known or unknown visitors are regarded as "doubtfuls." This class may subsequently be divided into "O.K." ("all right"),

"still doubtful," and "dangerous" sections. Naturally, the "dangerous" section are given the greatest amount of attention.

All new arrivals are carefully shadowed during the first few days they take up residence at the hotel. Those staying but a night or so are ignored unless their action warrants suspicion. It is easy to discover what class of person a guest is by the places he visits and the company he keeps during the first few hours of arrival. His luggage, particularly their labels, outfit, servants, if any, and all details noticed by trained observation are given to and recorded by the head spy. Thus a good idea of a guest's degree of wealth, personal character, and other individualities is obtained before he has sat down to a first meal at the hotel.

If, after, say, a couple of days' shadowing, he is found, like the majority of guests, to be engaged merely in business or pleasure-seeking, he is put on the "O.K." list. Should he visit doubtful districts or be seen in the company of suspicious looking individuals, to say the least of them, he is regarded as "dangerous," while if, after the shadowing, the spy is not satisfied in his mind concerning the guests, he is put on the "doubtful" list.

By this simple process of shadowing new arrivals, scores of expert assassins and saboteurs have been shot out in the street and "tabooed" by all the first-class hotels before they have been able to put into operation a single one of their cunning tricks.

There is a book kept at most big hotels for recording the names and addresses of all callers upon the hotel's guests. The visiting card they give the porter supplies these particulars, which are written down

by him on a paper slip, together with the time of his arrival. His time of departure is also noted.

To suspicious-looking callers and those visiting "dangerous" guests are given further attention. Each, as far as possible, is shadowed, and his place of residence and other useful particulars recorded in anticipation of any eventuality. With these precautions it is often-times possible, even when a theft has been committed with apparent success, to put a hand upon the astounded culprit before he has had time to dispose of the stolen property.

Goods Stolen at Night.

The thefts that give the secret department the greatest troubles are those which occur at night-time, and are evidently perpetrated by someone within the hotel.

Although the corridors are silently patrolled by a special night staff, the expert cracksman, by a turn of his skeleton key, is at once in the room where the wealthy guest's jewels and valuables are lying carelessly at hand—he perhaps not having taken the precaution to bolt the door.

In less than five minutes, with property worth hundreds of pounds, the thief is back again in his room, and provided he does not give himself away by his subsequent movements, there is little hope of capturing him.

Mysterious thefts are sometimes perpetrated by the hotel servants themselves. It is for this reason that the members of the secret service department strive to remain unknown to them, and that they sometimes exchange places with men on the staffs

of other hotels. Changes are constantly being made in the ranks of maids, porters, and waiters, and this occasionally is made the opening for a member of a dangerous gang to commence their nefarious business with little fear of detection.

A Life of Luxury.

Requiring most care of all, however, is the professional gambler, the unscrupulous man of means who lives by his wits, and very well, too, and who puts up at the best hotels at home and on the continent.

It is easy to see that he invariably wins, and that his prey is usually the youngest and most inexperienced of the wealthy guests, yet, unless his antecedents are known and brought to light, or he is detected in deliberately playing an unfair game, managers hesitate to openly accuse him. And knowing this, conscious also that he is being closely watched by the hotel spy, the rascal takes full advantage of the toleration, and eventually moves off to another hotel with an extra couple of hundred pounds or so in his pocket.

Altogether, the life of a hotel spy is a pleasant one. It is a jolly, luxurious life, with a spice of danger sometimes, and immense opportunities for character study of the affluent, much-traveled person.

He comes into close touch with many of the leading men in different parts of the world, and numbers countless friends and acquaintances, who little suspect that he is a paid official with orders to spy into their manner of life and character.

Some Wonders of Yunnan

BY MRS. ARCHIBALD LITTLE IN CORNHILL.

The following extract from Mrs. Little's narrative of her journey from the Yangtse River in China, through the province of Yunnan, gives the reader some idea of the wonders of that strange oriental country. The egg-carriers and the coffins in the cliffs are two extraordinary features to which Mrs. Little refers.

THAT first climb into Yunnan will ever remain impressed upon my memory as one of the very sensational experiences of my life. But before that there had been other wonders. Before ever I had thought of coming out to China I had heard of the transit of the wax insects—which are born as eggs on one tree in one province, and have to be carried by men to be placed on another kind of tree in another province—as one of its wonders, and there for days we had been nearly crowded off the road by these carriers. For twelve days men carry the eggs from Chaotungfu to near Kiating, carefully laid in little paper bags on trays, a layer of air, if possible, between the trays, in very lightly-made baskets, so as again to give free passage to the air, and well covered over with blue cotton to shield them from the sun, or, in the case of rain, with oil paper. Every night they all have to be spread out in the inns, such a work for the poor tired coolies, who have been carrying them rather an extra distance all day! For it is most important to get the eggs on to the other trees before they are hatched, and for the same reason they have to be cooled down each night. Sixty packages go to a load of eighty cattles, and its value is estimated at thirty taels (£4 10s.), a great sum to be trusted to a struggling coolie, so a responsible man, armed with a sword, goes in charge of each little company.

The other great wonder of the road is the Coffins on the Cliffs! The road

as far as Chaotungfu, twelve days, was habitually so bad that it was enough to make any one cry getting a pony over it—to ride one was an impossibility very often—but I see in my diary I have marked the road on our sixth day out as specially bad. It was a bright, sunshiny day, with the thermometer at 77, but with a pleasant breeze, when we came upon a cliff on the left or distant bank of the river. There was a little cleft in its perpendicular surface, and, fixed into this, in a place perfectly inaccessible now, a coffin! I heard the men talking about it, and I saw it. Presently afterwards we came upon a river rushing out of a lofty yellow cavern with pendant stalactites, caves in the rock above it, a mountain over it. Then we came to a cliff with square holes in the face of the rock, like those of the celebrated ladder by which Mengliang led his army up the end of the Yangtse Gorges. And there again there were coffins, this time several coffins. At Lao Wa Tan, where we stopped for the night, the centre of the cliff-coffin district, there was a suspension bridge, a fine one, and towers of defence also against the Mantze. Next day I saw limestone cliffs with caves in what seemed like inaccessible places, but with walls in front of them, and the whole cliff surface so honeycombed as to suggest subterranean passages, but the cliffs were always on the other side of the river, so that we could not get at them to examine them. But then came the wonder of wonders, the huge

limestone precipice of Tou Sha Kwan, where we slept the next night, 1,500 feet, I should say, but people who know it better say 2,000 feet high, and quite sheer from the swift, rushing river below. And there, fully one-third of the way up the face of the cliff, the only place where it would be possible, a ledge with at least eight or nine coffins. I could distinctly see with an opera-glass the square holes in the rock into which beams had been fixed to support them, and the beams that had fallen thence, and how the coffins now lay slanting, one on the top of the other, and how one, which had lost its lid, was apparently a tree hollowed out, presenting, I thought, a very narrow space for the corpse to lie in. But the marvel of marvels is, how were they ever got there. How did man ever get there? That, in itself, would be difficult enough; but how would it be possible even now to get coffins there? What was the idea in so doing? What was the forgotten race that had this strange fancy for burying its dead in inaccessible places? Strangely enough, I could never discern any of those ancient cave dwellings, carefully squared, with inner room and shelves, and simple but effective arrangement for "sporting your oak," of which there are such numbers in Szechuan. But it immediately recurred to my mind that once the boatmen had pointed out to me what they called a coffin on the face of the cliff on the left bank of the Yangtse in the Witches' Gorge. I had thought then it could only be a bit of limestone that had taken the shape, because the place seemed quite inaccessible, and only looked at it to please the boatmen, but now it occurred to me could this also be a coffin? Then in the Bellows Gorge, the bellows that give their name to

it are very like these Yunnan rock coffins, and I remembered a boatman saying: "Of course it really is a coffin." Could this unknown race have extended so far in old days? And what had been the thoughts in their hearts as with incredible ingenuity and exertion they placed their dead in these inexpugnable rock sanctuaries? It seemed a place to sit down and think. Deep down below us the river we had followed for so many days was flowing, still swelling in the middle with excess of water, and swift but not rushing quite so much as its wont, and with a dull, mysterious air, preparing us already for its underground journey—Where Alph the sacred river ran, Through caverns measureless to man.

Then high up above soared the cliff, towards the top already catching some gleams of sunshine from the sun now emerging from behind the mountains, while in the distance we caught glimpses of the wild defile we were about to descend into—a temple to the goddess of Mercy, in a cave to our right, high up in it. There is an extraordinary variety of different races in Yunnan, and everywhere traces of hard fighting in the past, old and new watch-towers, ruins, fields thrown out of cultivation; but which of these races was it that had at one time dominated and thought out these grand sepulchres for its great men? For, of course, it can only have been the leaders who were so honored. In Mongolia last summer I remembered the great hillocks just upon the border, raised to the memory of forgotten kings, and recalled those grand lines—

My name is Ozymandias, king of
kings;

Look on my works, ye mighty, and
despair,

written at the base of a monument in Egypt, where all trace of his works and of his life personality seem alike to have disappeared.

Here, at least, remain these coffins, with, it is to be supposed, the bones inside, though I have since heard that, in one case at least, a party of Chinese did last year succeed in reaching one set of coffins, and opening one, being afterwards very much rebuked therefor by the authorities. They, or rather some one, mounted, I have been told, upon a series of bamboos one upon the other with sticks fixed into them much like a steeplejack. Of course, the Chinese have a very easy way of accounting for the position of these coffins; they say that in old days men had wings, adding that many wonderful things exist to this day in Yunnan. "Are not these very cliffs full of monkeys?" Of that last, though, I am doubtful, not having seen any.

All the way along the vegetation was wonderfully varied, great Hoang-ko-shu (*Ficus infectoria*), the magnificent shade trees of Szechuan, changing their leaves, as I had never seen them do, sometimes all a most beautiful yellow, flashing golden in the sunshine, sometimes already in bright spring green livery, sometimes half and half, or, in part, still retaining last year's leaves, and wreathing "their old fantastic roots so high" as to be scarcely credible; then ash trees, tallow trees, innumerable fine walnut trees, Spanish chestnuts, and suddenly a great congregation of tall candelabra cactuses, presently formed into hedges by the wayside. Directly one comes into Yunnan one perceives a disposition to plant on either side of the way. Thus at times there are exquisite green lanes between overarching willows, or banksia or rambler roses, some double, and all

alike sweet. Then, after a while, we came upon exuberant wistaria, with miserable little flowers, though, and blue mimosa trees, and numbers of trees and flowers to which I could give no name.

But for days the road chiefly impressed itself upon me by the long procession of sufferers we passed on the way. They were bound for the same destination as ourselves, but so heavily weighted for getting up those awful hills. With their burdens attached to their backs by back-carriers they would pause, relieving themselves for a moment of the weight by means of the double-headed, iron-loaded crutch they carry with them for the purpose. With knitted brows, the mouth fallen open through suffering, the lower part of the body panting violently, they would gaze upon us as we passed, apparently unseeing, so much were they absorbed by their own exertions and consequent suffering. Carried past them, in a comfortable, open sedan chair, propped upon cushions, with a cloak to draw round me against the wind, and all manner of conveniences in different bags hung round the chair, it was impossible not to wonder, as so often in life, why some people from the outset, and by no fault of their own, seem set apart to groan under heavy burdens. Some of these burden-carriers were, alas! so young, and being as yet undeveloped, must thereby become misshapen. Those returning, and approaching the end of their—at the quickest—twenty-six days' journey, often five weeks, in many cases walked bent double. But, I think, what struck me the most was the way they went by us as unseeing, no speculation in their eyes on being confronted with what must have appeared to them such strange-looking barbarians.

Year in year out this long train of heavily-laden ones toils up the steep hills, sometimes at an angle of forty-five degrees, a rise of a foot to each step, down steep descents, slippery after a rain shower, round abrupt corners, past which it is quite a feat to get a load without scraping it against the rock; and, after seeing this sad procession and thinking about it all for ten days on end, one feels as if any nation that could start a railway would be a benefactor to the human race, elevating man to being the tender upon a machine instead of, as now, doing all the brute, rough

work himself. Thinking of the jolly-looking porters at most English railway stations, and contrasting them with the quivering frames, the parted lips, and anguished expressions of these Chinese porters, one could not help feeling as if there must be a blessing upon whoever would undo the heavy-burdens. How often is this forced home upon one in China, while one forgets the rivalry among European nations, the competition for the unopened markets, and thinks only of the immense, unspeakable benefits to be conferred upon the poor, suffering toilers of China!

Providing for an Ocean Liner

BY MARY SPENCER WARREN IN CHAMBERS'S JOURNAL.

Provisioning an ocean liner, which must supply the many and varied wants of from two to three thousand persons for nearly a week, is no small task. The arrangements are all of an exact description and everything is made to work like clock-work.

THE work of providing for a liner carrying about three thousand persons over the Atlantic is prodigious, the more especially as every one's tastes, wants, and wishes are considered, and the cuisine is brought to a level with that of a first-class hotel. There is so much competition nowadays on the sea, as elsewhere, that all the companies make excellent arrangements for provisioning their boats, and to describe one is practically to describe them all, save that foreign companies cater specially for their own nationality.

The best known and oldest British company is the Cunard, a line founded upwards of sixty years ago to displace the brigs which occupied six or seven weeks upon the voyage. The company's first steamer carried sixty-three passengers and two hundred and twenty-five tons of cargo;

their present steamers carry from about two thousand to three thousand passengers, and an average of ten thousand tons of cargo! It is scarcely necessary to assert that the interiors of the boats are models of luxurious appointments, every one, in fact, being what may be termed an aristocrat of the sea.

We will suppose a would-be passenger applying to the Cunard Company for particulars of transit across the Atlantic. He is in the first place furnished with a sailing list, giving dates of departure, prices of bookings, and a declaration form which he must fill up and return. This enacts that any person who is blind, crippled, suffering from tuberculosis or contagious disease; who is a lunatic, child, or widow—or, in short, cannot support him or her self—is excluded from the United States un-

less he can prove that he will not become chargeable to the American authorities. Polygamists and those who have been in prison are also ineligible, and the greatest care is taken that none but persons in sound health are admitted as intending residents. Then the passenger has but to choose the class by which he will travel, and the rest is all plain sailing. In return for his deposit or full amount of passage, by which he secures a berth, he receives his ticket, number of berth and cabin, a supply of labels, and much helpful information. It may also be recorded that the company are always anxious to meet the wishes of their passengers as far as possible, and should a desire be expressed for a cabin in any particular part of the ship, that desire is met if practicable. If the passenger is traveling from any large centre to the place of embarkation, there is a special arrangement for the supply of train tickets at a reduced price; and the same applies to destinations beyond the landing port.

On the day of departure from London or any other terminus a special train will be found in readiness for the passengers, the thirds generally traveling either the day before or by night, as they must go on board early; the firsts and seconds leaving at a convenient hour in the morning. Every saloon passenger will find a reserved seat awaiting him, with a number affixed corresponding to that which he has previously received on his papers, and all luggage is taken possession of by the agents of the company, and labeled with the ship's name under their directions. From then until he arrives at the foreign port the passenger need not trouble himself further about his effects. That labeled "Cabin" is, on the arrival of the train, placed under or

on the passenger's berth, the heavy packages labeled "Not wanted" disappearing into the hold. The special train runs right down to the docks, and the passengers have but to cross the huge bridge, one end of which abuts on to the main deck of the vessel. Everything is done with such perfect precision and aptitude born of long experience that there is absolutely no confusion, and within a very short time the huge vessel is steaming out towards Queenstown, where additional passengers and mails are taken on from the tenders.

The dining saloons on the first and second decks seat about four hundred each, and if there is a full complement of passengers the company must dine in two parties. Each seat is numbered, the passenger retaining his or her number throughout the voyage. Those who are good sailors develop remarkable appetites, but catering is most liberal, and one is scarcely conscious of a feeling of hunger before something or other is served to assuage it. Quite early in the morning, fruit, or tea, coffee, and biscuits, are brought into the cabins, and the second bugle-call at 8.30 intimates that breakfast is being served in the saloon. This is a la carte, and the healthy passenger manages his three or four courses with ease; those who are suffering from the voyage having practically what they please in their cabins.

At eleven o'clock Bovril and biscuits are served on deck, and at one o'clock passengers are summoned to an excellent luncheon. At 4.30 the deck serving consists of afternoon tea, followed at 6.30 by dinner; while from nine to ten tea, coffee, cocoa, and sandwiches are served to order. The chef is a man of large experience, and he has an excellent staff under his direction, while the menu

includes all the delicacies which would be found at a table d'hôte on land. The steerage passengers have, of course, a plainer bill of fare, but it is extremely liberal, and both for quality and quantity is far superior to the usual food of the majority of third-class passengers.

The figures connected with the provisions supplied form wonderful reading. Take a few, and we find eighteen thousand pounds of beef, six thousand pounds of mutton, three thousand pounds of pork, two thousand five hundred pounds of fresh fish, two thousand fresh herrings, three thousand head of poultry, one hundred and forty barrels of flour, twenty tons of potatoes, six hundred boxes of ice-cream, two hundred gallons of fresh milk, eighteen thousand eggs, one thousand pounds of butter, three thousand pounds of ham and bacon, two thousand five hundred pounds of dried fish, and a ton and a half of fruit—all this for a single journey only! The amount cooked for any one day seems quite wonderful, the soup alone coming out at one hundred and fifty gallons, while as many as two thousand eggs are often served at a single meal. These latter are cooked in metal dippers, made in rows and having perforated bottoms; each dipper is time-marked, and at the end of the prescribed period the ringing of a bell denotes that the dippers have automatically sprung up from the water.

Much of the cooking is by electric apparatus, roasting-spits being also electrically turned, while bread and biscuits are mixed by machinery as in a modern biscuit factory. Up-to-date machinery is used for making coffee, and a supply sufficient for four hundred people can be made in ten minutes. All carving is done on hot presses, with receptacles beneath

for heating plates. It may be explained that the milk is taken to sea in sealed cans, and these and the whole of the food are kept in refrigerating rooms at a temperature of thirty degrees (sufficiently cold for storage of from five to ten days).

The utmost care is taken for the comfort, and precaution for the safety, of the passengers. There is, of course, a qualified medical man on board ready for all emergencies, and each day the captain, doctor, and chief steward go round the ship and inspect all quarters; there is also regular inspection of pumps, fire engines, masts, etc.; and at some portion of each day there is lifeboat and fire drill to secure thorough efficiency in case of accident. On board each ship there are from sixteen to twenty lifeboats and four collapsible boats, each one of which has its allotted crew; and in every cabin and state-room there is a liberal supply of life-belts.

The amusement and recreation of the passengers are well catered for, a piano being found in each saloon, even that of the steerage. Impromptu concerts take place nearly every evening, and it is an understood thing that a fully arranged concert—the programmes for which are printed on board—is given the night before landing; the arrangements, of course, being in the hands of a committee of passengers. The whole of the collection made is given to the Seamen's Mission, a sum of several pounds generally being realized. On deck are various English and American games for fine weather, and there are excellent writing, smoking, and sitting rooms, with a capital library provided with up-to-date literature. Wireless telegraphy is installed on every boat, and the latest news is re-

ceived from invisible passing liners, while a Cunard daily paper is now a familiar item. It only remains to add that there is a large staff of experienced stewards and steward-

esses, and that the service throughout is prompt and efficient, in addition to which the boats of the Cunard Company enjoy a deserved reputation for steadiness at sea.

The Kind of Men Employers Want

BY H. J. HAPGOOD IN WORLD'S WORK (AMERICAN).

Never before has there been such a crying need for men of honesty and ability in the business world. Good positions are going begging because capable men are not to be had to fill them. The requisites are ability and honesty, the first supplementing the second and the second the first. The outlook of the times is very roseate for the young man of enterprise and character.

WITH the most effective methods human ingenuity can devise, American employers are searching for thousands of men who possess honesty, ability, and the capacity for hard work. The demand is not confined to any one locality or particular line of work. It extends throughout the country in all kinds of business, from that of the small manufacturer to that of great industrial enterprises.

This crying need for men is one of the most serious problems with which the business world has to deal. Because of it, manufacturing companies are months behind in their orders. Capitalists stand ready to launch new enterprises, and industrial companies to extend their scope, as soon as they can find enough suitable men. Only a short time ago a company backed by English and American capital was obliged to give up its plan for developing extensive rubber properties in South America, because it could not find men fitted to superintend the work.

The difficulty in finding men is not due to the unwillingness of employers to pay the proper price. Never in the history of the world have

larger salaries been paid. Hundreds of employers would like to find \$10,000-a-year men to replace cheaper men now in their employ, but they must be men who can accomplish things and show a profit of several times the amount of their salaries on the yearly balance sheet. With one Chicago firm alone, annual salaries of more than \$10,000 await two men who can fill responsible executive posts. The presidents of scores of companies receive salaries which a few years ago would have been considered a comfortable fortune. In this year of unprecedented business prosperity, the market value of able men has increased at least 10 per cent.

There is no limit to the salary captains of industry are willing to pay men they want. One of the largest industrial combinations sent representatives to Europe to offer a salary of \$25,000 a year to a man who had the qualifications necessary to establish and take charge of its most important departments. The offer was refused, although the company was willing to go even higher. The place is still unfilled.

So well qualified a judge as Mr.

Elbert H. Gary, chairman of the board of directors of the United States Steel Corporation, which pays out in salaries and wages about \$125,000,000 a year, sums up the matter when he says:

"The real question is not the size of the salaries but whether the right men are drawing them. One man may be cheap at \$10,000 a year, while another man in the same position might be dear at \$10,000 a year. The tendency of the business world just now is not to search for men who will take low salaries but for men who deserve high salaries."

Employers want men who combine with ambition and natural talents, honesty and the capacity for hard work. "But why lay such stress on honesty?" "The honesty of employees is guaranteed by the bonding companies." In fact, they often make employees financially honest by holding over them the constant threat of detection and punishment. But they have to do only with financial integrity. The employees whose dishonesty is the most costly are often those who would never take a cent from the till, but who defraud the employer through thefts of time, through half-hearted effort, or through placing their own interests above those of their firm.

Honesty means something more than financial reliability. It is the quality which makes a man work without watching the clock, or being afraid that he will give his employer more value than he is being paid for. The honest employee brings to his work the best effort of which he is capable, and begrudges nothing where the interests of his employer are at stake.

A young man was recently applying to a well known employer for a position. He was in the midst of

rather a glowing description of his peculiar qualifications for the place, when the employer interrupted him with: "Never mind about all this. There is just one thing I want to know. Will you work?"

Every man who intends to make himself of value to his employer and to win advancement (and the two go hand in hand, despite all that pessimists may say) must have this capacity for work. No matter how great his ability, how thorough his education, or how attractive his personality, these qualities are as worthless as a locomotive without fuel unless backed up by persistence and energy. He may be retained for a time because of his ability, but in the long race he will be found wanting. Some day his employer will be forced to give the position which he has hoped for, and which, by his natural talents, he is pre-eminently fitted to fill, to a man who, although less capable, has shown himself to be a worker.

It is work that makes a good salesman—not natural ability, appearance, or personality. One of the best salesmen in the United States is red-headed, homely, uncouth, and poorly dressed—he does not seem capable of selling bread to a hungry millionaire. Yet he sells on an average more than \$100,000 worth of goods a year, in a field where competition is remarkably keen. He succeeds by making hard work take the place of the adaptability, the personal magnetism, and the appearance which he lacks.

The perseverance of this salesman is the quality lacking in many men. Plenty of men can work hard when the road to success seems clear, but when difficulties thicken they lose their grip. Others work by spurts, keying themselves up to high pitches

for brief periods, and then lapsing into half-hearted effort. Neither the fair weather type, nor the sky-rocket worker is desired. Employers want men who can be relied upon for even better effort when the skies are dark than in times of prosperity, and who will be as persistent the month after next as they are to-day.

In considering applicants for positions, employers are always on the watch for signs of this persistence. Many well known business men think that they can judge a man on this point by the manner in which he seeks a place, and this is not a bad method, for there are few positions worth the having which can be secured without persistence.

To the technical man, more than to any other kind of man, perhaps, is intense application necessary. Science is advancing so rapidly, that if he does not apply himself both in the office and out, he will soon be left behind. One of the most eminent consulting engineers in the world says that he never has time to read a book or a magazine except those pertaining to his work, and that he works on an average more than twelve hours a day. "I don't do this from choice," he says, "but because I am forced to, in order to hold my place in my profession. If I were to give up the studying I do outside the office hours, even for a few months, I should find myself behind the times."

Men often advance to some responsible position, and then suddenly and without apparent reasons fail and

drop out. "The place got too big for him," we say. But in most cases the real reason for the failures is that the man began to slacken in effort, thinking that he had advanced so far on the ladder of success that he could afford to take things easy.

For the business man of to-day there is no such thing as taking things easy. The higher he gets, the more is expected of him, and the harder he must strive. The president of a great manufacturing company, for example, says that one of his duties alone, the securing of capable assistants, is harder work than he ever had to do when he was only the head of a minor department. The man who does not realize that continuous effort is essential to a general manager as to an office boy, will not be of permanent value.

The managing director of one of the largest British banking institutions, having more than one hundred branches throughout the world, attributes the failure of many men to not realizing this truth. It has been his observation that out of one hundred employees starting on an apparently equal footing, only ten ever rise above the surface, and of this number not more than one ever proves fit to hold permanently a position of great trust and responsibility. The other nine begin to take things easy as they advance farther and farther, and thus fail to reach their maximum value. For of fit men there is a great scarcity. Whenever found, large salaries and unlimited opportunities for advancement await them.

How Microbes Pay Dividends

BY HENRY M. HYDE IN TECHNICAL WORLD MAGAZINE.

New uses for the by-products of great industries are constantly cropping up. To-day the sulphate of iron formed in the acid baths of steel works, is sold for a million dollars to the waterworks departments of great cities, and is used by them for the purification of the water supply. Thus the typhoid fever germ is made to contribute to the dividends of the steel trust.

IN all the tremendous mills now owned by the American Steel & Wire Company—one of the big brothers in the United States Steel Corporation family—millions of tons of steel plates and rods are daily given a bath in sulphuric acid. This acid bath cleans the steel of grease and other impurities before the rods are drawn out into wire and the plates are covered with a deposit of tin. At the same time it removes the iron oxide or rust from the surface of the metal.

So long as the mills remained under individual ownership and management—and for some time after they were taken into the trust—the acid bath was used day after day, until finally the acid lost its strength. Then the tanks were emptied and their contents run off into the sewers, to be replaced by a new supply of sulphuric acid. Occasionally, indeed, a curious chemist took some of the useless contents of the tanks, before they were emptied, and by evaporation, secured some greenish crystals of sulphate of iron, popularly known as copperas or green vitriol. This was formed, of course, by the reaction between the sulphuric acid and the iron rust. There was even some small market for this salt. It was used in the grinding of plate glass, as a mordant for fixing and setting dyes and colors, and in paper mills. But the demand was small, and, so long as the mills remained in the hands of individual owners, no one of them produced enough sulphate of iron to

make the preservation of the by-product commercially profitable.

When all the great steel and wire plants came under one management, a department of chemicals was organized, with Mr. A. T. Weaver at its head. One of the objects of this department was to save and make money out of the sale of various chemical by-products of the mills.

One day, about three years ago, within a week after Mr. Weaver had taken charge of the department, a casual order came into his office for a few hundred pounds of sulphate of iron. The writer, who was at the head of the city waterworks at Quincy, Ill., had heard that the Steel & Wire Company occasionally saved some of the salt. Could they supply him?

Now, Mr. Weaver had already figured out that there was going to waste in the plants of the company a total of 150,000 tons of sulphate of iron annually. He was eagerly looking for a market which could absorb such an enormous quantity. Here was an order from the superintendent of a waterworks. What on earth could he want with 600 pounds of copperas? Mr. Weaver wrote to ask what it was to be used for. In the meantime, the man who gave the order happened to be in Chicago, and visited the office of the Steel & Wire Company to inquire how soon the goods would be shipped.

Before he got away, he had furnished information which will eventually mean a clean saving to the American

Wire & Steel Company of a round million dollars a year. It means, besides, on the authority of many expert sanitary engineers, that there is now at hand a new, comparatively inexpensive, and entirely successful method of quickly purifying water in large quantities, absolutely destroying all disease germs and removing foreign substances. In other words, there is no longer any legitimate reason why any city, town, or village should not furnish its citizens with a copious supply of perfectly pure water for all domestic purposes.

"Why," said the man from Quincy, "we're using the sulphate of iron, in connection with lime, to purify our water."

That was a new idea. Sulphate of iron and limewater had been used for the chemical precipitation of sewage; but never before it was suggested by Mr. W. B. Bull, of the Quincy water-works, had the two been used together for the mechanical purification of drinking water.

"Will you let us send down a chemical engineer and a bacteriologist to make a thorough investigation of your method?" asked Mr. Weaver.

"Send them along," said the Quincy scientist. "They'll find that it does the work."

Mr. Weaver sent for Ernest E. Irons, the bacteriologist, and told him what was wanted.

"Go down and spend as much time as is necessary to get at the facts," he said.

"I'm almost sure there's nothing in it," answered Mr. Irons. "I think you'll be wasting your money to send me down there."

"Then you're the very man we're looking for. If you go prejudiced against the process, and come back converted, we can be sure it's a good thing."

Mr. Irons went to Quincy, and stayed there for six months. He came back and made an enthusiastic report in favor of the process. He found that the use of sulphate of iron and lime, in connection with the large filters, resulted in the production of a perfectly pure and palatable water, clear and brilliant, comparing favorably with the purest spring water. In this opinion he was backed by James E. Campbell, M.S.C.I., chemical engineer, who spent two weeks in studying the Quincy process.

With this report as a foundation, the American Steel & Wire Company started to exploit the use of sulphate of iron and lime for the purification of turbid and infected water.

One of their first steps was the permanent employment of C. Arthur Brown, a well known sanitary engineer. The services of Mr. Brown were at once put at the free disposal of any municipality in the country which wished to improve the quality of its water supply. While the object of the company was, of course, to secure a large market for its production of sulphate of iron, Mr. Brown is instructed to do his work in an unbiased and scientific way, recommending the use of sulphate of iron only when it appears to his professional judgment to promise the best and most economical results. Mr. Brown stands ready to visit any city interested in purifying its water supply, to make a thorough investigation—including analyses of the water, if necessary—and to recommend what appears to him to be the best method of improving conditions.

When the sulphate of iron and lime solutions are put into the water, they form a thick, white, flocculent precipitate. This precipitate sinks to the bottom of the filter beds and catches in its meshes—roughly speak-

ing, like a net—all the dirt and other impurities suspended in the water, and a very large percentage of all the germs and microbes, both harmful and harmless, so that the water, after leaving the filters, is perfectly clear and clean and contains not more than one per cent. of the germs it originally contained.

But even one per cent. of germs—provided they be typhoid fever germs, for instance—might kill a number of people, and it was apparent that the iron and lime process—like all the others then commercially practicable—was open to that serious objection.

About this time the Government scientists of the Department of Agriculture announced their discovery that a small amount of sulphate of copper would absolutely destroy all the animal and vegetable germs in a very large quantity of water. At once, Mr. Brown, with the co-operation of the Government chemists and bacteriologists, instituted a series of careful and thorough tests of the effect of a minute proportion of copper sulphate in connection with the regular sulphate of iron and lime solutions. These tests were made at Anderson, Indiana, in February, 1905, under most trying conditions. The water supply of Anderson is obtained from the White River, into which the city of Muncie empties its entire sewage at a distance of twenty-five miles above the Anderson waterworks plant. At the time of the experiments, the river was covered with ice so that water at Anderson was taken from what was practically a covered sewer—shut off from the purifying effects of air and sunlight—full of diluted sewage.

By adding one per cent. of sulphate

of copper to the regular sulphate of iron solution—used in connection with lime—it was found not only that the disease germs were absolutely destroyed, but also that a perfectly pure and brilliant water was delivered from the filters, without the slightest trace of either iron or copper in it.

In order to get these results, it is necessary to vary the proportion of copper and the other chemicals to suit the varying conditions of the water treated. It is also necessary that the filtering plant be in good working order, and that the whole process be under the charge of a man of proper intelligence and probity.

Up to the present time forty cities—including St. Louis, Mo.; East St. Louis, Ill.; St. Joseph, Mo.; Marietta, Ohio; Quincy, Ill.; Vicksburg, Miss.; Little Rock, Ark.; Danville, Ill.; Aurora, Ind.; and Pontiac, Ill.—are using the process.

Out of a total possible production of 150,000 tons of sulphate of iron a year, the big company has already disposed of over 25 per cent. on yearly contracts to the cities on its list. As it also produces copper sulphate as a by-product, the addition of that chemical will only add to its profits. The number of cities using the process is rapidly increasing, the amount paid by them for sulphate of iron already amounting to over a quarter of a million dollars a year. When the whole possible product of 150,000 tons is contracted for, the gross annual income of the trust from this source will be about \$1,200,000.

The cost of purifying water by the process ranges from \$1.50 to \$2.50 a million gallons, according to the percentage of impurities it contains.

Van Horne's Advice to England

WORLD'S WORK (ENGLISH).

In an interview with a staff writer of the *World's Work and Play*, Sir William Van Horne explains the spirit of Canada in its trade relations to England and the United States. His advice to British manufacturers is to visit Canada themselves and study conditions on the spot. He believes a little work on their part to be worth a great amount of "preference."

FORTY-EIGHT years of railway work, the last twenty-five of which have been in Canada, have left Sir William van Horne with an experience second to none among the great railway pioneers of the world. The Canadian Pacific Railway, as he would probably say himself, has made Canada. And Sir William van Horne, as he would probably not say himself, has to a very large extent made the Canadian Pacific Railway what it is—the greatest institution in the country. The pioneer of Canada's trans-continental railway is to-day more than keeping pace with its rivals in expansion of traffic and in growing earnings. It owns many million acres of land and 12,000 miles of railway, and to this mileage it is adding largely each year. It has on the Atlantic and the Pacific, and in coasting trade, more than thirty steamships and a large number of lake and river steamers besides. To these will shortly be added two 20-knot passenger steamships of 15,000 tons for the trade between England and Canada; and more are to follow. These two are nearly completed at the Fairfield shipbuilding yards for service in June next, and Sir William van Horne had just returned from a visit to Glasgow when the present writer saw him in London the other day to obtain his views on Canada.

To the British manufacturer Sir William gives the very emphatic advice that he should go to Canada and study the conditions of the Cana-

dian trade on the spot. He does not think that a sufficient knowledge of it can be obtained at second-hand; the principals should go and see. He does not think England has taken advantage of the opportunities Canada has given her in the way of preferential duties. Of course, there is an awakening now, and every one is talking about Canada, but compared with the activity of American business men in working for Canadian trade, the English are very far behind. Having the great advantage of being close at hand, the merchants and manufacturers of the United States do not for one moment neglect to press their trade in Canada. Time was when Canada in common with other countries had to come to England for many commodities, and as to these no soliciting was necessary; but that time has passed, and England must work for her trade as other countries are doing. Canada is now making for herself many of the things she formerly had to buy from outside. Until eighteen months ago, for example, she had to go abroad for rails; now she makes them all herself. And so in several other industries, for Canada is conducted as a national business, and no sentimental attachments will prevent her from providing for her own interests first. But what she cannot make herself the United States is close at hand to supply. Another advantage the American manufacturers hold is that, physical conditions in Canada being very much the same as in the United

States, the commodities offered are, in many cases, better adapted to the wants of Canada than are those furnished by England. But apart from these considerations, the fact remains that Canada, with great and growing needs, is being exploited for all it is worth by American traders, while British traders who could undoubtedly "cut in" effectively, seem to be hardly alive to the possibilities.

"There is hardly an American manufacturer," says Sir William van Horne, "who has not an extensive personal acquaintance with Canada, and who does not keep in touch with its requirements by occasional—and in some cases frequent—visits. Very few English merchants and manufacturers ever visit Canada or have any knowledge from personal observation of the particular requirements there. Many of them do not send representatives there to look up business and find out what is wanted, but do their business through local agents whom possibly they have never met. In short, very few English firms are constantly, actively, untiringly represented in Canada as American firms are. This I regard as a matter of vastly greater importance than preferential tariffs or anything of that sort. For eight years, Great Britain has enjoyed a preferential tariff of 33 per cent. in Canada. This may seem—and rightly seem—a great handicap against the Americans, but they have overcome it. How? In 1895 they sent us fifty million dollars' worth of goods; in 1905 they sent us nearly one hundred and fifty million dollars' worth. The British increase in the same time has been small by comparison. And how did the Americans increase their trade with us by nearly 200 per cent. in the face of our preferential tariff?

Simply by work. By work the Americans have secured the greater part of the trade advantages resulting from the extraordinary development of Canada—persistent work; scenting the business and following it up every day and every hour; finding out just what is wanted, and supplying it. The Americans hardly feel that they are working against a preference of 33 per cent. Which goes to show," added Sir William, "that a little work is worth a vast amount of preference."

And so the chairman of the Canadian Pacific Railway Company offers to the British manufacturer this direct advice. "Go through the country; look at the stuff that is being produced by the local manufacturing firms; study all the conditions and requirements; mix with the people, see what they want; find out all about the stuff that is used, and either arrange for direct representation of your firm or find who are the good men to act as agents. Go yourself. Don't send a boy." Canada as a field for holidays is a theme almost as familiar to readers as the wonderful progress and development of Canada; and English merchants and manufacturers who are sportsmen might take a leaf out of the American book and combine business and pleasure in Canada. For this is what Americans do, flocking to Canada's salmon streams, lakes, and fishing-places, and, for big game, to her forests.

It seems impossible to get away from the United States when speaking of Canada, and so a conversation with Sir William van Horne must inevitably touch upon the question of the American settlers whom the Dominion is attracting in such numbers. The result is a clear statement upon

the relations of Canada with these settlers. "These Americans," he says, "are practically all farmers, and come chiefly from the States west of the Mississippi River. They are substantial men who have been able to sell their farms—in Iowa, Nebraska and other States where they bought them cheap—at high prices, affording them enough money to buy lands in the Canadian West, sufficient for themselves and all their children. It is a repetition of movements which have gone on for nearly a century—first from the Atlantic seaboard States to western New York and Pennsylvania, then to Ohio, next to Illinois, again to Iowa and Nebraska. Beyond Nebraska there are few lands suitable for agriculture, so this latest movement necessarily takes the direction of western Canada. These people make the best settlers we could wish for, having both money and experience, combined with the common schools education which provides the American with so excellent a grounding. They invariably enter Canada with the intention of making it their permanent home and becoming Canadians. Danger to the British connection? No; the fear that has been expressed in some quarters that the influx of Americans would tend to Americanize western Canada is in that sense quite groundless. There are a great many Americans in Canada, and they are just as loyal to the community in which they have cast their lot as those who were born there. They find fully as great freedom as in the country they left, combined with a rather better administration of the laws, and consequently greater security for life and property. They have no desire to change anything. And, after all, it may be said that we cannot be more

American than we are. All of Canada is more or less Americanized already. That is quite natural in view of the propinquity of the two nations, and the constant and intimate communication between them. But the Canadian people are not any the less loyal to Britain. It is a mistake to suppose so. A cordial feeling exists on both sides of the international boundary between the States and Canada, but, nevertheless, trade lines are sharply drawn, and each side jealously guards its trade interests. Sentiment and neighborhood do not count there. The people of the United State have erected a high and strong trade fence to which they have made additions from time to time, until all of Canada's products, save a few which she could better use at home, have been practically excluded. Canada has imitated this trade fence to some extent, and I think she is now disposed to strengthen it and to add broken glass bottles and barbed-wire to make it effective. This will not be done in any spirit of ill-will. With the Americans 'business is business,' and the Canadians are very like them. They are taking care of themselves; that is all. It is very certain Canada will not long permit any other country to manufacture for her what she can make herself."

As to the future, Sir William van Horne declines to be prophetic. His faith, however, is radiant enough to be communicable to any one who talks with him. "The development of Canada is only beginning," he remarks. "It is only a comparatively short time since western Canada was opened up by the Canadian Pacific Railway. Until then her manufacturing enterprises had but very

limited scope, and there were very few of them of any consequence. Now, however, the chimneys of manufacturing establishments are in evidence everywhere east of the Great Lakes, and great concerns have grown up."

The question as to the sort of people Canada wants is always capable of being answered in one's own mind, by the reflection that in a

country three thousand miles from east to west, there are only yet some seven millions of people. "We want anybody who is not a pauper or a criminal," says Sir William van Horne. "The assimilating power of a new country is so prodigious that by the time the second generation is reached, it matters little of what nationality or condition were their fathers and mothers."

People Who Profit by Hard Times

CASSELL'S SATURDAY JOURNAL.

Good times and hard times are but relative terms, and what may be a profitable season to one man, may be a poor season to another. The common notion that hard times weigh heavily on everybody, is not proved by actual experience. As the following article shows, there are some people who actually profit by a period of trade depression.

A STOUNDING as it may seem, it is unquestionably the fact that to a considerable number of persons depression in trade, such as we have been experiencing of late, means thoroughly good business. At first sight this statement appears to be an enigma. We have been told that about a million individuals are now out of work, and that several millions—seven or eight at least—are on the verge of starvation. How comes it, then, that the woes of this vast multitude, together with the general tightness of money, is of benefit to certain traders?

The explanation, although apparently obscure, is really perfectly simple. The practice of economy, which is imperative when times are bad, puts cash into the pockets of those who do things on the cheap, and others, such as pawnbrokers, who are deluged with articles on which it pays them handsomely to advance £ s. d., and men who renovate clothes.

"Since trade has been slack," said a cobbler, "I've done very well. Why? Simply this, that hundreds of pairs of boots have been brought to me to be repaired, which, had there not been a want of employment, would have been thrown out to tramps. If the owners had been in regular work they would have been shod afresh. Their cash would have gone to the boot shop people. I shouldn't have seen a cent. That's why I've been in clover for the last year or so."

Dyers and cleaners have also been on excellent terms with themselves since the gaunt figure of bad trade has cast its grim shadow over the land. An impoverished public has had its clothes dyed or cleaned instead of purchasing new outer garments. Men who when they are in funds buy new suits as required have, in order to keep up a decent appearance, to get their suits dyed or cleaned when they are hard up, and the same remark applies to

women and their frocks. Thus dyers and cleaners who are brought into contact with certain sections of the community earn money which, if trade were satisfactory, would find its way into the hands of tailors and dressmakers.

"When shekels are scarce," observed one of the fraternity, "we have to patch up any quantity of clothes which, if the owners were not suffering from the blight of bankruptcy"—expressive phrase—"would have been chucked on one side."

The second-hand clothes dealer ought to cry trumps when trade is at a low ebb, for he can purchase cast-off apparel at a ridiculously small figure, and yet maintain his normal selling prices. During a wave of depression he has the advantage both ways, for while there is one class anxious to sell, there is another—slightly higher in the social and financial scale—desirous of buying; the latter comprising persons who, when in the enjoyment of prosperity, would never dream of arraying themselves in second-hand coverings.

It is natural that the deportment of the pawnbroker should be cheery during a wave of depression, for it is then that he has to face an avalanche of pledges which in all human probability will never be redeemed. Possibly while bad trade endures, the traffic in his retail department shows a decline, but even this is not certain. By rights he should attract customers eager to save their purses who have never been wont to patronize him. In any case he has his reward, for unredeemed pledges spell first-rate profit.

All that we are saying now amounts to a very curious story, for nearly every detail has been overlooked by the Government officials and also by the bulk of the public.

It is not pretended, for one instant, of course, that bad trade can by any conceivable process of argument be construed into good trade for the masses, but the phenomenon—if this is not too strong a word to use—resolved concretely into this, that depression in the markets of our country is a lucrative accident to a large body of traders, is deserving of widespread attention.

Foreign meat vendors gain considerably when trade is drooping. Literally thousands who when not hard pressed for coins of the realm refuse to partake of a mouthful from a joint that is not of native origin, tickle their palates with inexpensive alien animal flesh when they are in a needy condition.

Instituting inquiries into this question to the fullest extent, one is amazed, staggered, at the number of persons who wax fat when millions of us grow thin. Even the humble, necessary charwoman palus some extra shillings when money is short. Thousands who pay for a "general" when pounds, shillings, and pence can be earned, discharge the willing "general," and avail themselves of a "char," when times are hard.

The cheaper music-halls also are a point ahead when trade is slack, for those who were diligent patrons of the gorgeous palaces get their entertainment—which apparently they must have—when they are hard pushed for cash at the cheapest price possible.

Finally, even beggars welcome bad trade. When things are going well with him, the average man is apt to conclude that things are going well with all men, but when he feels the pinch of poverty, and has a coin to spare, he is more ready to dispose of that coin to a whining creature who begs of him in the street.

Is the Fixed Salary a Curse?

SMITH'S WEEKLY

Whether or not the writer of this article is correct in his sweeping condemnation of the fixed salary, it remains for our readers to decide. All will agree however, that his lesson of thrift is a good one, whether a man be on salary or in business for himself.

THIS is to be a disagreeable article, intended to make the young and old man working for a salary think seriously about himself. If you talk to a man who has £2 a week salary, he will say to you:

"I can just manage to live on it—fairly well—but I can't save a penny. I see no hope ahead for the future."

The man with a salary of £10 a week will say, in exactly the same tones:

"I can just manage to live on it, and keep my family half decently. But I can't save a penny. I don't know what would become of my children if anything should happen to me."

And it is always the same story, no matter what the salary or the wages—the full amount is always spent, it is difficult to make ends meet, and there is nothing left over to show for long years of work.

To the man of small salary it may seem absurd to talk of the man with one or two or three thousand pounds' annual salary spending every penny and being always behind hand—yet that is what happens almost invariably.

A well-known novelist, with a salaried income about the same as that of the Prime Minister, is always worrying about meeting bills, the same as the man with £2 or £3 a week.

The cashier of a huge bank, a man whom every inhabitant in this country knows by name, drew an enormous salary for a great many years. Yet when his employer—a

millionaire—died, this salaried man, with more than £10,000 a year, had nothing to show for his years of work. He was an old man, and the sons of his late employer combined together to provide for him. He could tell a very good story of the extravagant habits that come of a fixed salary.

The purpose of this article is not to make the salaried man feel foolish, or merely to convince him that he is extravagant. Unless some useful suggestion were made, this page of white paper would be utterly wasted.

Let us consider, therefore, why it is that the salaried man, with a steady, regular income, is nearly always the man who has nothing saved up against a rainy day.

Why is it that the rich man in telling his life-story nearly always describes some business venture, some enterprise, that he went into on his own account, as the basis of his success and fortune?

In the first place, we do not appreciate that which comes without any especial effort. What we can do easily and regularly, we take as a matter of course.

The man working for himself, with the element of uncertainty in his work, is compelled to realize the possibility of future difficulties. Constant change, fluctuations in profit and in public taste keep him out of a rut and alive to actual conditions. The man with a salary simply looks upon that as a minimum. He arranges promptly to spend all of it, no matter

what it may be. He knows that he will have it this week and next week. He usually thinks he ought to have a great deal more—sometimes he ought to, and sometimes he deceives himself.

But not one salaried man in a thousand realizes that as he draws his weekly salary he is selling himself, his youth, his strength, and his future prospects on the instalment plan.

At the end of a week, when a man draws his salary, he has sold one week of his life, and one of the best weeks. It is strange that in a nation where a great majority of working men and women work for a salary, so few realize what the salary means. It means discounting the future, and selling yourself for weekly payments.

A great many men and women who work for a salary will see this article—very many thousands of them certainly.

I want to talk directly, in their own interest, to these men and women.

You are working for a salary, and so you spend it as it comes.

You have been doing this in the past, and, despite an occasional feeble good resolution, you will continue doing it in the future.

Have you no lesson to learn from the experience of others?

Don't you now any poor old man who for years and years drew a good salary but saved none of it? Don't you know that we are all about alike, and that if you keep on as at present you will be in that old man's place?

Even when you look over the past and think of the total amount you have earned in the last five or ten or fifteen years, can you not see that it would have been possible without suffering for you to have saved such a sum as would make you feel independent now?

The difference between a man with £500 or £600 in cash saved and the man with nothing is the difference between independence and dependence, between weakness and strength.

We laugh at the old story about the man who gave up tobacco or beer or some trifle, and with the money saved established independence.

But we ought not to laugh. The late George M. Pullman, the inventor of the famous Pullman cars, talking one night to a number of men, said to a very young man who was with them:

"When I was your age I was doing fairly well and earning a pretty good salary. But I had my sleeping-car in mind. I wanted to build the car, and I made up my mind that to succeed I must have some money. The cigars that I smoked cost 2 1-2d. each. I gave them up, and gave up other things, too. The total didn't amount to much, but the habit was valuable."

The determination needed to make a young man give up his pleasures and small extravagances is the kind of determination that gives real success.

George M. Pullman possessed determination. He gave to the world a sleeping-car of inestimable value, besides making himself enormously rich. If he hadn't had the courage to save on a salary and to give up what most young men consider absolutely essential, the great Pullman sleeping-car enterprise might have gone up into the air in the smoke of cheap cigars.

Millions of men in the United Kingdom have had good ideas and taken them into the grave with them because they hadn't the determination to save the money necessary for carrying out an idea.

Millions of men have the capacity to go into business on their own account, to have a salary list of their own, instead of figuring on someone else's list—but they lack the one quality. They cannot resist the temptations which make the salaried man extravagant.

To the man traveling through this world of fierce competition, money is like quinine to the explorer in an African fever swamp. The man who sells his life week by week and spends the money as it comes, is spending whatever chance he might have of independence.

The worst of it is that, besides making men extravagant, the salary system makes the great majority of

them indifferent and careless. It kills imagination and special effort. It keeps a man in the rut and prevents his ever doing the best that is in him.

One word of urgent advice. If, reading this, you should make up your mind to save, save on yourself. Cut down your own expenditures. Cut off your useless pleasures and self-indulgences. Don't cut down on your family, on your wife or children, or on others who have a right to look to you for support.

The average extravagant salaried man can easily reform, and make the necessary change without affecting anyone but himself. He need not economize at the expense of others.

Mushroom Culture as an Industry

BY C. M. STORY IN AMERICAN INVENTOR.

Mushroom farming has become a very important and lucrative industry of late years. The raising of the common mushroom is not a difficult matter and the demand for them is on the increase.

MUSHROOM culture is by no means a modern fad. As an article of food, these odd plants, for such they are, have for centuries past been highly esteemed, and the Greek and Roman epicures gave up a great deal of their time to considering favorable times and places for gathering them, and to choice methods of preparing them for the table. Perhaps the reason why we do not hear much about mushroom farming to-day is due to the fact that, fungi in general includes some varieties which instead of being nutritious and delightful, contain deadly and virulent poisons. This fact doubtless intimidates many "would be" enthusiasts. Through

ignorance in distinguishing between the edible varieties and the poisonous, frequent cases of poisoning have occurred in all classes of society.

These mistakes, many of them resulting in death, have been frequent enough to inspire the timid with an overpowering dread of all fungi. I am going to mention and describe a few of the common edible varieties, which are almost unmistakable, and may be gathered by an amateur with impunity.

Horace says that mushrooms that grow in the fields are the best, and that one can have but little faith in the other kinds, but the epicures of the present day find edible species, wherever fungi are known to grow

and are constantly adding to their lists, new varieties, which although sometimes rather gruesome in appearance, are conceded to be delicious in flavor. Fungi now-a-days is very often subdivided by the ignorant into two classes: toad-stools and mushrooms. The former term is applied to every species which they consider non-edible and poisonous, while the few edible varieties pass as mushrooms. To quote an authority this distinction has no scientific basis, for in fact most of the so-called toad-stools are edible. In the ranks of fungi are to be found many varieties, which with their coloring and symmetry of their forms are the grotesques of nature; nests, hoofs, cups, umbrellas, shells and clubs are represented. In ordinary observation, only the simpler and more noticeable fungi are taken into account, but they are in reality met with in almost every situation imaginable. They are found in damp cellars and in rooms shut off from the light; in fact some form of fungus will be found in almost every place, and on everything which is not exposed to a circulation of fresh air. In the woods and open fields, however, the attractive forms are found.

Frequently rings of mushrooms have been found, and wondered at by the public, but the explanation may be reached in a natural and satisfactory manner. A single fungus plant growing alone upon a lawn, will soon exhaust the soil directly beneath it of all true fungus food. Of all the spores that fall from the parent plant, only those will grow which fall outside the impoverished spot, and consequently a ring of toadstools, or mushrooms, is formed. In this way the ring continues to widen from time to time.

A simple definition of fungi is almost impossible, but it may be said that they are plants which have no leaf green, and which do not grow from true seeds, but from dust-like bodies resembling in appearance the yellow pollen of roses or lilies.

The most common mushrooms (agaricales) are of such a distinctive character, that it is almost impossible, even for a novice to go astray in selecting them for the table. The variety most commonly sold in the restaurants and hotels is known as *agaricus campestris*, or the common mushroom. Of the genus *agaricus*, the flesh of this variety is probably the most highly esteemed.

The time to look for it is in the late summer and autumn. The skin of the cap is easily separated from the flesh. It grows in moist pastures, lawns, and in fact any place where the soil is sufficiently rich and moist. This variety is frequently preserved in cans and sold in the markets. A peculiarity of the genus *agaricus* rests in the fact that the stems are rather heavily collared, a fact which should aid the collector in identifying the species. In *agaricus campestris* the gills, or under side are at first a soft pink, and later they become darker, and finally brown. *Agaricus rodmani* is another variety which is very similar to *agaricus campestris*. The flavor, however, is a little more distinctive, and is very agreeable. This variety has a little less the appearance of a ball. The stem is about two inches long, and the cap unfolds quite early, so that this mushroom bears a decided resemblance to an umbrella. It grows in grassy pastures, and sometimes along roadsides in cities, as well as in the country. Nina L. Marshall reports having found them growing in a cluster be-

tween broken stones in a gutter of a village street in New Jersey. This variety grows profusely from May to July.

A third edible variety, *agaricus abruptus*, grows along the cow-paths and woodland trails during the month of September. The stem is rather long and very brittle, perhaps it is because it is hollow from very near the base to the cap. The cap is rather inclined to be irregular in shape, when the mushroom is immature and the skin is creamy white and very silky. It becomes yellow when bruised. The flesh is solid, and has a decided flavor of pistachio nuts. I mention these few varieties, because they are the kind most likely to be encountered by the amateur. Although he may see other varieties which may be edible, these few types are easily distinguished from any poisonous mushrooms, which may inhabit the same localities.

Mushroom farming has become a very important and lucrative industry of late years, and timid partakers of hotel and restaurant fare may feel perfectly at ease in accepting mushrooms, as there is no possibility of mistakes occurring now-a-days, when they are systematically selected and placed before the epicurean public.

It is really not a difficult matter to raise the common mushroom, as the conditions necessary are easily obtained. A temperature of from fifty to sixty degrees fahrenheit is required to raise them successfully. A cellar with a dry floor is a good place to experiment. The room must be somewhat darkened, however, and there should be no exposure to the wind.

In order to prepare *agaricus* for cooking, they should first be thoroughly washed and cleaned; the

stems should be cut off and thrown away.

The caps should be rinsed, and then be left in cold water, acidulated with lemon or vinegar until just before using.

To keep mushrooms temporarily, the same rule should be observed, but instead of leaving them in cold water, they should be placed in boiling water and allowed to boil for five or ten minutes. They should then be drained and wiped dry. Most cook-books give complete receipts for cooking *agaricus campestris*, and the same receipts may be relied upon in cooking the other kinds.

In the introduction of this article it was remarked that the consumption of mushrooms was much restricted by the dread that many persons have of gathering by mistake poisonous species, popularly known as toadstools. There is, unfortunately, no rule which may generally apply to distinguish the edible from the dangerous mushrooms, and thus it is not surprising that this dread is widespread. It is not necessary, however, to be well versed in cryptogamic botany before venturing to collect mushrooms. The differences between many of the edible and non-edible varieties may not on first acquaintance be very great, but on further scrutiny and practice, assisted at the outset by the instruction of "one who knows," the identification of the more commonly occurring edible forms becomes a matter of little difficulty. When in addition to their qualifications as a delicacy it is remembered that mushrooms possess a comparatively speaking high food value (as made evident by their protein content), it would seem well worth while to devote some time and pains to the acquirement of this knowledge.

The Electric City of the Future

BY S. MORGAN BUSHNELL IN CASSIER'S MAGAZINE.

When we consider the developments in electrical engineering of the past twenty years, we will not wonder when prophets begin to prophesy about the marvels to be disclosed in the next twenty years. Some of these are referred to in the following article, and all seem to be quite in keeping with the possibilities.

A LARGE amount of current is now used annually for various forms of heating apparatus. Many tailor shops are supplied with electric heating irons; electric soldering outfits have been largely used; and electric cooking in the ordinary household is becoming more and more frequent. A few years ago the central station was considered as a means simply of supplying power and light for small stores, for private residences, and for small shops using only a very limited amount of power and light. The companies are now waking up to their opportunities, making attractive propositions and securing the business of some of the largest buildings and factories.

New economies will be introduced into the distribution of power, and the result will be an inevitable cheapening of the cost of electricity. This cheapening will greatly accelerate the tendency which now exists among all classes of buildings to secure their current from the central station source of supply, and it would not be astonishing if within twenty years we should find architects paying as little consideration to the installation in their buildings of electric light and power plants as they do to-day to the installation of plants for the production of illuminating gas.

This result will, in turn, react on the central station and enable it to produce power in much vaster quantities than ever before, and the result will be an aggregation of power for a large city in two or three great electric power houses, in which all

the elements entering into the production of electricity will be secured at a minimum of cost. This will react again on the lowering of the price of electricity, so that the use of electricity for lighting, for elevator service, and for the ordinary uses of power which we find to-day will be greatly increased, and mechanical power will drive out manual labor to a greater extent than has hitherto been known.

This reduced cost of current will greatly accelerate the movement which is now in progress in favor of diffused and concealed lighting. High-class apartments and residences, instead of being lighted by lamps placed in the centres of the rooms, in order to obtain the greatest amount of light possible, will be lighted largely by cove lighting and concealed lighting, securing a mellow effect entirely different from the glaring results which are now so common. Shades will be introduced which will form just the right combination of red, blue, and yellow rays, so as to avoid, on the one hand, the pale glare of the modern Welsbach, and at the same time avoid an excess of the red rays which have been found irritating to the eye.

The reduced cost of power will probably revolutionize also the present methods of refrigeration. Already miniature electric refrigerating plants have been designed, whose operation is absolutely automatic. These plants have thus far been successfully installed in a number of places, and the reduced cost of power

will cause their adoption to a great extent, not only by the larger consumers, as at present, but also in private residences and apartments.

The push-button elevator is already found frequently in the more elaborate residences. The reduced cost of power will not only stimulate the use of these elevators, but will tend to the adoption of escalators or moving stairways, so arranged that it will simply be necessary to turn a switch at the bottom of the stairs in order to ascend to the top. Automatic arrangements can be provided so that when the person leaves the stairway the current will be instantly cut off.

Apartment buildings of the future will have every possible contrivance for increasing the ease and comfort of their tenants. The old bugbear of "washing and wiping dishes" will be entirely removed, for each apartment will be provided with an electric dish-washing machine, which, with the aid of the hot water faucet, will automatically perform the operation. The future apartment building will be supplied with a carefully worked-out system of ventilation and will be constantly supplied with pure air, filtered and washed by modern and improved methods. The serving of meals will be largely simplified by elaborate systems or dumb waiters and signaling devices, so that the guest in an apartment building or hotel can have almost any dish served automatically without unnecessary delay by simply pressing a given button. Already in Berlin, Paris and New York there are automatic lunch counters where customers can secure hot or cold dishes and hot or cold drinks by depositing coins in an automatic device which serves the various articles. There are no waiters to tip,

nor is the customer annoyed by their awkwardness. All is done automatically by means of electric motors.

The reduced cost of power will be felt in every line of industry, and all lines of manufacture depending upon machinery for their product will be in a position to make lower prices on their goods. The old problem of three meals a day will be largely simplified by the use of electric sauce pans and other devices, which can be maintained at varying temperatures by throwing a switch in different positions.

The reduced cost of electricity will also have a marked effect on the exterior appearance of large cities. Myriads of lights, blazing along the most prominent thoroughfares, will turn night into day, and the standard of street lighting, which is already several times in advance of what it was twenty years ago, will be correspondingly advanced.

To-day thousands of tons of cinders and coal dust are annually poured out from city chimneys and distributed over buildings and thoroughfares, requiring the constant effort of a large force of men for their removal. This task will be much simplified by the abolition of hundreds of miniature power plants and the concentration of power production in two or three great stations where the combustion of coal will be accomplished on an enormous scale and so perfectly as to eliminate all smoke.

Not only will light and power for isolated buildings be furnished by electric current from the main central source of supply, but great systems of transportation, such as are required in a modern metropolis, will be supplied with the necessary power from the same generators.

A Canadian Who Owns a City

HERALD MAGAZINE

Hugh J. Chisholm, the man who practically owns the great paper-making city of Rumford Falls, Maine, is a Canadian by birth, a native of Niagara-on-the-Lake. His career has been meteoric. From a humble origin, he has leaped up to a foremost place in the industrial world of the United States.

THE owner of a waterfall 10 feet higher than Niagara, the owner of a booming city of 7,000 inhabitants, the owner of a plant that manufactures all the postal cards for the United States Government, the owner of a railroad, the absolute ruler of what to all intents and purposes is a small kingdom—this is the remarkable position to-day of Hugh J. Chisholm. And all this is not in the heart of Africa, as it might at first be supposed, but in the heart of the staid old state of Maine. And, what is more marvellous still, this man, starting from nothing, has done all this himself within a period of 20 years.

It sounds almost like an "Arabian Nights" tale. Twenty years ago the Androscoggin River tore its turbulent path out of the heavy timber and made that tremendous leap at what is now Rumford Falls, Me., with no one but the rabbits and bears to watch the waste of 500,000 horsepower. Then Hugh J. Chisholm came along. He watched the wild leap of those waters, and did some thinking. The result of that thinking shows to-day in the city that has sprung up almost by magic.

And it is an unusual city. It has all the flavor of a western boom town about it. It is like a section of New York transferred to the edge of the woods. Although you can walk around the condensed city in fifteen minutes, you will see modern hotels, classic bank buildings, electric lights, new stores, great mills and all the

confusion and excitement of a hustling city.

Talk with any of the inhabitants and you would imagine yourself west of the Rockies.

"Rumford Falls. Going to be the greatest city in the east. Yes, sir, everything humming. Can't get a foot of land in it. Grow? It's going to grow until it runs over half the county."

And yet out of your hotel window you can see the pine forests covering the rugged hills, and you can see a river jammed full with a million logs.

The mills are running night and day all the year around. Everything in the town is high—wages, food, rents—all based on New York prices. Space is scanty, and, inasmuch as the city is on what is practically an island, there will never be more of it. Consequently, rents are way up. A small store and basement costs \$2,000 a year in rent, and people are fighting to get the places. Not a foot of land can be bought for any price. It is all owned by Hugh J. Chisholm. The rent goes to him, and he can make it what he pleases.

The city, as has been said, is on an island in a river. The Androscoggin flows on one side of it, just after its 180-foot plunge over terrific rocks and chasms, while on the other runs a canal. The whole island, on which stands the entire business section isn't more than a quarter of a mile long by half as broad. One main street, Congress street, splits the is-

land down the middle; one street runs on each side of the island; and across it run two parallel streets. The city proper contains just six blocks, all in a solid mass, all sitting complacently there with water on every side, like Venice on an up-to-date industrial basis.

Outside the island there are suburbs, to be sure, where the people eat and sleep; but they are invisible from the city. Hills and woods hide them; people reach them by bridges; they do not enter to any extent into one's impressions of the place. No, Rumford Falls itself is just that curious jammed together island full of tall city blocks, with all "modern improvements," hemmed in by rushing water and wild woods. It makes one think of those medieval garrison towns on inaccessible islands; if its bridges were destroyed it would be a hard place to capture by assault.

The streets and buildings show as much real city as Boston or New York—shops, office buildings, elevators, electric lights, hot and cold water—everything! Electric cars there are none. What's the use? You can walk around the whole business section in ten minutes, or even less.

The city itself is not so interesting as the contrasts which it offers. You can stand under a great bronze entrance, between classic Greek pillars, and look right into the virgin hills; from your luxurious bathroom at the hotel you gaze directly out into a canal full of logs, whereon lumbermen risk their lives, or, on the other side of the canal, see gigantic piles of spruce logs waiting for the mills below to devour them. Turning your eyes up-stream, you behold the ceaseless spectacle of the great falls, ten feet higher than Niagara, whence is developed a horsepower ex-

ceeding 400,000, day and night, the year around. In the other direction you see the monster mills of the International Paper Co., ceaselessly grinding up the forests to make news paper and affronting heaven with their gigantic chimneys.

Everywhere you look you find odd contrasts, strange sights, curious people. On the streets you hear French, Italian, Polish, Lithuanian, Russian, Lord knows what! Even the signs in the postoffice are printed in five languages!

Twenty years ago you would have found nothing at Rumford but the falls themselves—just that superb great gush of waters swirling down over the precipices through a country given over to the towering pine and the ill-natured blackberry. Only a farm or two intruded on this primitive wilderness; the farmers tickled the rocky soil with crude ploughs and tried to wring a living out of old Dame Nature, when, had they known it, a golden flood was simply waiting to be drawn upon—the inexhaustible treasure of the Androscooggin water power.

Time passed, and presently a certain man happened to visit the region. A good many have heard his name—Hugh J. Chisholm, the real founder of the town of Rumford. When he saw that big river falling over those big rocks he discerned the possibilities. The results of his discernment are spread out on the island and all about it, in the mills, workshops and homes of 7,000 people, and in the \$7,000,000 or \$8,000,000 Mr. Chisholm is calculated to be worth.

It paid him to think, and to see more than any one else had seen—to let imagination dictate and to follow where it led. The visible expression of his thought is what we know to-

day as Rumford Falls, the "Paper City" of New England.

Year by year the great mills grew; year by year the people came to work in them. With the accumulation of wealth there arose luxurious shops, theatres, hotels; to-day every refinement of civilization clusters about that magnificent waterfall, drawn thither as to a magnet.

The city grew fast; it is still growing. Every shop and place tells the same story: "Oh, we're hardly settled yet; just moved in last month!" or, "Our new building will be ready in a week!" Nothing is old, nothing venerable. Romance of the old-fashioned kind shrinks from such crudity; the newer romance, that of wealth and achievement, hails Rumford Falls as a shining example of what American brains, skill, money and water—water power can do.

To-day Rumford Falls is the home of 7,000 people and some of the largest industries in the country. Its finest residence section, Strathglass Park, contains one row of 50 houses, none costing under \$5,000.

The International Paper Co. has one of its largest mills here, and controls a dozen subsidiary companies whose annual output of pulp products is just a trifle short of the miraculous. One of the paper machines here, a Fourdrinier, turns out paper 162 inches wide—probably the largest in the world. The Continental Paper Bag Co., controlled by the International, is capitalized at \$5,000,000, and supplies bags of all sizes for every use. At the Oxford Paper Co.'s mills the United States postal card contract is held until 1909. This contract alone is worth \$750,000 a year, the most valuable known to the book paper trade, might give the city

cause for boastfulness, were it so inclined.

Excellent railway service, with Pullman sleepers, connects the city with Portland and with the Rangeley Lake region. Inquire a bit and you will find that the omnipresent Hugh J. Chisholm is president of this railway, just as he is of the various paper mills; he owns the city, its lands, communications, industries, everything. Everywhere his energy, skill and foresight are visible—the whole region exists and prospers through the splendid strength and wisdom of this master mind.

Once Chisholm sold newspapers on trains; now he owns more land and power than many a European prince.

"How did he get up in the world?" was asked a friend at Rumford.

"Jumped up, I guess!" was the answer.

"Jumped up?"

"Yes; and he took Rumford Falls up with him; that jumped up, too, from a berry pasture to the liveliest, busiest and most prosperous little burg in Maine."

The secret lies primarily in the astonishing water power developed by the Androscoggin at this point, and secondarily in Mr. Chisholm's tireless development of this power. Here we have 180 feet drop in the space of less than a mile, furnishing a minimum of 426,000 horsepower at all seasons, guaranteed by an immense storage system of four dams and 123 square miles of lakes among the forest regions of the river's headquarters. There is nothing in the country to touch it except Niagara, whose volume is greater, though the absolute height of Niagara Falls is less.

The power available at Rumford exceeds that of the three largest manufacturing towns in New Eng-

land. Because of the large storage reservoirs, anchor-ice and back-water are entirely obviated, and a steady, constant supply is assured the year round. The Winter of 1894-5 was one of extremely low water, yet the Rumford mills ran all Winter, night and day, up to their full capacity, with ample water supply. The following Spring the other extreme had to be met—unprecedented freshets caused the river to rise to a point untouched for 40 years. Yet so perfect were the means of controlling this water that no mill was required to shut down, and no back-water interfered with the turbines. The great dams, granite walls, bridges, re-

vetments and piers stood unharmed by the terrific flood, which thundered down, laden with log-jams and huge floes of ice. Rumford has taken her precautions, and fears no fury, no caprice of the foaming Androscoggin.

As long as the river flows, tossing and fuming between its granite banks; as long as the spruce stands on Maine's hills, as long as there is paper to be made and the hand of man to guide the whirling engines that produce it, so long will Rumford Falls, once a berry pasture, now "the most hustling burg on the map," continue to grow, thrive and prosper exceedingly.

Early Story of the U. S. Steel Industry

BY HERBERT N. CASSON IN MUNSEY'S MAGAZINE.

Like the beginnings of all great industries, that of the steel industry in America was very humble. It is the same old story. There was the persevering inventor working amid almost superhuman difficulties, and there was the usual circle of sceptics and scoffers. Also there was the final triumph which has meant so much to the prosperity of the United States.

THERE is not a chapter of ancient history in the story of steel.

Any one who visits the little Pennsylvania town of Bethlehem may still see John Fritz, who might almost be called the father of the steel mill. In Louisville still lives a white-haired old lady, wife of William Kelly, the original inventor of what is called Bessemer steel. In Chicago any visitor may see Bob Hunt, whose personal reminiscences reach back to the earliest dawn of the steel era. And the masterful Scot who rescued our steel business from periodic bankruptcy, and won for it the commercial supremacy of the world, is still flitting between New York and Skibo and thinking more of the future than of the past.

Even our younger steel kings—Frick, Schwab, Corey, Morrison, Dinkey, Jones, and the rest—can remember the early period of small sales and petty economies. Hundreds of men who helped to rock the steel giant in his cradle are still to be found in the mills and offices of Pittsburgh. In Johnstown may be seen the first tilting converter that Kelly used in making Bessemer steel; and the boy who helped the inventor with his experiments is still employed in the Cambria mills. In fact, the whole steel industry is so young that nine-tenths of the information in this series of articles was obtained, not from libraries, but from the men and women who have seen it grow out of feeble infancy into its golden age.

On that bleak November day when Andrew Carnegie was born in a Scottish cottage, the iron and steel makers of America had no more thought of millions than of castles in Spain. Steel sold for twenty-five cents a pound. The ironmasters mined little coal and baked no coke. Not an ounce of iron had been made in Wheeling, Youngstown, Cleveland, or Chicago—the latter being a fur-trading village, without harbor or railroad. Birmingham, Alabama, was not on the map until two-score years later. There was not a foot of railroad near Pittsburgh, and not one rail, either of iron or steel, had been produced in any part of the country. And the total American output of iron in that year was less than we make now in four days.

As late as the beginning of the Civil War, what was called a first-class furnace would cost about fifty thousand dollars, employ seventy men, and produce a thousand tons of iron a year. The business was conducted, not by corporations, but by individual ironmasters, who ruled in a truly feudal way over their small communities. There were no millionaires, and what little money an iron-maker had was liable to become waste paper at any moment by the collapse of a rickety bank. Four furnaces out of five were haunted by the specter of debt; and in a bad year, like 1837 or 1857, scores of furnaces were blown out. The tariff, too, was even more variable than the currency. It was raised and lowered by the fitful gusts of politics until 1861, when the Morrill tariff first gave some chance of stability to the unfortunate industry.

With the Civil War came the first large orders and continuous business. Every plant was run night and day.

The output of iron nearly doubled, and the price jumped from \$18.60 to as high as \$73.60 per ton. Of the three billion dollars that the war cost the Federal Government, a goodly share went to the iron-men. Uncle Sam was the best customer they had ever known. They had a surplus in the bank, at last—a store of capital which enabled them to do business on a larger scale. When the smoke of battle had cleared away, Captain Eber B. Ward, of Detroit, loomed up as the first of the iron kings, with several millions to his credit and three flourishing plants, in Chicago, Detroit, and Milwaukee.

The marvelous modern expansion of the iron and steel industry was now about to begin. The germ of its stupendous growth lay in the invention of the Bessemer process. It is necessary, therefore, that this article should describe that wonderful discovery—what it is, and how and when and by whom it was invented.

When there arises a demand for something that shall play a vital part in our national and social development—a demand which is earnest and universal—science is pretty sure to meet it. Even nature must yield when the human race centers its brain-force, with white-hot energy, upon a certain point of attack. It was so in the cases of electricity, railroads, cables, the telegraph, and the telephone; and fifty years ago the most pressing need of the civilized world was a new metal—one that would be as strong as steel and as cheap as iron. This was more than a trade problem. The railroads were using iron rails, which wore out in less than two years. The largest locomotive of that time would to-day be considered little more than a toy. There were no skyscrapers and no

subways, and stages were practically the only street cars. Neither wood nor iron was fit for the new uses of the growing republic; and the high cost of steel made it almost as much out of the question as silver. The greatest need of the world was cheap steel.

At this juncture an answer to the universal demand was voiced by the inventive genius of two men—William Kelly, a Pittsburgh Irish-American, and Sir Henry Bessemer, an Englishman of French descent. They devised a new way to refine iron, which has since been known as the Bessemer process. Their discovery was an entirely new idea, and one which at first seemed absurd to every other steel-maker; but within a few years it was universally adopted, revolutionizing the iron and steel trade, and providing the world with a cheap and abundant supply of its most useful metal. It expanded the industry with almost the suddenness of an explosion, and for the first time in the long history of steel-making the steel-smiths were fairly swept off their feet by a flood of riches. Hundreds of individuals were picked up—by merit, by luck, or by chance—and flung upon the golden thrones of an international empire of steel.

In 1846 William Kelly and his brother bought the Suwanee Iron Works, near Eddyville, Kentucky. Kelly's father was a well-to-do landowner in Pittsburgh, where it is said that he erected the first two brick houses in the city. At the time when William Kelly began to make iron, he was thirty-six years old—a tall, well-set-up, muscular, energetic man, with blue eyes and close-cropped beard. In inventiveness his brain ranked high; in business ability, low. He had lert a commission business

and become an iron-maker mainly to carry out a process which he had invented, by which larger sugar-kettles were to be made. The "Kelly kettles" became well known among the southern farmers.

He had married Miss Mildred A. Gracy, of Eddyville, and secured the financial backing of his wealthy father-in-law. His iron plant was a fairly good one, close to high-grade ore, and needing the work of about three hundred negro slaves. Mr. Kelly was strongly opposed to slavery, and tried to escape being a slave-holder by importing Chinese. He was the first employer in this country to make this experiment, and found it successful; but international complications prevented him from putting it into practice on a larger scale.

Kelly's first aim was to make good wrought iron for his kettles and for customers in Cincinnati. His iron was refined in what was called a "finery fire"—a small furnace in which about fifteen hundred pounds of pig iron was placed between two layers of charcoal. The charcoal was set on fire, the blast was turned on, and more charcoal was added until the iron was thoroughly refined—a slow, old-fashioned process which used up quantities of charcoal.

In a year all the wood near the furnace had been burned, and the nearest available source of supply was seven miles distant—a fact with which the unbusinesslike Kelly had not reckoned. To cart his charcoal seven miles meant bankruptcy, unless—he could invent a way to save fuel.

One day he was sitting in front of the "finery fire" when he suddenly sprang to his feet with a shout, and rushed to the furnace. At one edge he saw a white-hot spot in the yellow

mass of molten metal. The iron at this spot was incandescent. It was almost gaseous. Yet there was no charcoal—nothing but the steady blast of air. Why didn't the air chill the metal? Every iron-maker since Tubal Cain had believed that cold air would chill hot iron. But Kelly was more than an iron-maker. He was a student of metallurgy, and he knew that carbon and oxygen had an affinity for each other. He knew what air was and what iron was, and like a flash the idea leaped into his excited brain—there is no need of charcoal. Air alone is fuel.

It was as simple as breathing and very similar, but no human mind had thought of it before. When the air is blown into the molten metal, the oxygen unites with the impurities of the iron and leaves the pure iron behind. Oxygen—that mysterious element which gives life to all creatures, yet which burns up and destroys all things; oxygen, which may be had without money in infinite quantities—was now to become the creator of cheap steel.

Kelly was carried away by the magnitude of his idea. His unrestrained delight, after months of depression, amazed every one in the little hamlet. Most of his neighbors thought him crazy. Only three listened with interest and sympathy—two English iron-workers and the village doctor.

At first Kelly snapped his fingers at opposition. "I'll prove it publicly," he said. At his invitation a number of jesting iron-makers from western Kentucky gathered around his furnace the following week, and Kelly, caring nothing for patents, explained his idea and gave a demonstration of it. Air was blown through some melted pig iron, agitating it into a white heat, to the amazement of the

brawny onlookers. A blacksmith seized a piece of the refined iron, cooled it, and with his hammer produced in twenty minutes a perfect horseshoe. He flung it at the feet of the iron men, who could not believe their eyesight, and, seizing a second scrap of iron, made nails and fastened the shoe to the foot of a nearby horse. Pig iron, which cannot be hammered into anything, had been changed into malleable iron, or something very much like it, without the use of an ounce of fuel.

Surely the thing was too absurd. Seeing was not believing. "Some crank'll be burnin' ice next," said one. The iron-men shook their heads and went home to boast in after years that they had seen the first public production of "Bessemer" steel in the world.

Kelly called his invention the "pneumatic process," but it became locally known as "Kelly's air-boiling process." He proceeded at once to refine his iron by this method. He sent his steel, or refined iron, or whatever it was, to Cincinnati, and no flaws were found in it. Years before Mr. Bessemer had made any experiments with iron, there were steamboats on the Ohio River with boilers made of iron that had been refined by Kelly's process.

But now came a form of opposition that Kelly could not defy. His father-in-law said: "Quit this foolishness or repay the capital I have advanced." His Cincinnati customers wrote: "We understand that you have adopted a new-fangled way of refining your iron. Is this so? We want our iron made in the regular way or not at all."

About the same time, Kelly's ore gave out. New mines had to be dug.

Instead of making ten tons a day, he made two.

He surrendered. He became outwardly a level-headed, practical, conservative iron-maker, and won back the confidence of his partners and customers. Then one night he took his "pneumatic process" machinery three miles back into a secluded part of the forest and set it up. Like Galileo, he said: "Nevertheless, air is fuel!" No one knew of this secret spot except the two English iron-workers whom he brought out frequently to help him.

Under such conditions progress was slow. By 1851 his first converter was built—a square, brick structure, four feet high, with a cylindrical chamber. The bottom was perforated for the blast. He would first turn on the blast, and then put in melted pig iron with a ladle. About three times out of five he succeeded. The greatest difficulty was to have the blast strong enough; otherwise the iron flowed through the air-holes and clogged them up.

His second converter was made with holes in the side, and worked better. He discovered that he could do ninety minutes' work in ten, and save further expense in fuel. One improvement followed another. In all, he built seven converters in his backwoods hiding place.

In 1856 Kelly was told that Henry Bessemer, an Englishman, had taken out a United States patent for the "pneumatic process." This aroused Kelly's national pride more than his desire for a monopoly, and he at once filed in the patent office his claims to priority of invention. The patent office was convinced and granted him United States Patent No. 17,628, declaring him to have been the original inventor.

Then came the panic of 1857, and Kelly was one of the thousands who toppled over into bankruptcy. To get some ready money, he sold his patent to his father for a thousand dollars. Not long afterwards the elder Kelly died, and willed his right to his daughters, who were shrewd, businesslike women. They regarded their brother William as a child in financial matters, and refused to give him his patent. After several years of unjustifiable delay, they transferred it to Kelly's children. And so, between his relations and his creditors, Kelly was brought to a standstill.

But even at the lowest point of defeat and poverty, he persevered. Without wasting a day in self-pity, he went at once to the Cambria Iron Works, at Johnstown, Pennsylvania, and secured permission from Daniel J. Morrell, the general superintendent, to make experiments there.

"I'll give you that corner of the yard and young Geer to help you," said Morrell.

In a short time Kelly had built his eighth converter—the first that really deserved the name—and was ready to make a public demonstration. About two hundred shopmen gathered around his queer looking apparatus. Many of them were puddlers, whose occupation would be gone if Kelly succeeded. It is often fear that makes men scoff, and the puddlers were invariably the loudest in ridiculing the "Irish crank."

"I want the strongest blast you can blow," said Kelly to Leibfreit, the old German engineer.

"All right," answered Leibfreit. "I gif you blenty."

Partly to oblige and partly for a joke, Leibfreit goaded his blowing engine to do its best, hung a weight

on the safety-valve, and blew such a blast that the whole contents of the converter went flying out in a tornado of sparks. The air, it must be remembered, will take away, first, the impurities in the iron, and, second, the iron itself, if it is too strong or too long continued. This spectacular failure filled the two hundred shopmen with delight. For days you could hear in all parts of the works roars of laughter at "Kelly's fireworks." In fact, it was a ten years' joke in the iron trade.

In a few days Kelly was ready for a second trial, this time with less blast. The process lasted more than half an hour, and was thoroughly unique. To every practical iron-maker it was the height of absurdity. Kelly stood coatless and absorbed beside his converter, an anvil by his side and a small hammer in his hand. When the sparks began to fly, he ran here and there, picking them up and hammering them upon his anvil. For half an hour every spark crumbled under the blow. Then came one that flattened out, like dough—proving that the impurities had blown out. Immediately he tilted the converter and poured out the contents. Taking a small piece, he cooled it and hammered it into a thin plate on his anvil, proving that it was not cast iron.

He had once more shown that cold air does not chill molten iron, but refines it with amazing rapidity if blown through it for the proper length of time. His process was not complete, as we shall see later, but subsequent improvements were comparatively easy to make. Bessemer, by his own efforts, did not get any

better "steel" in 1855 than Kelly had made in 1847.

For this exact account of Kelly's achievements, I am indebted to Mr. J. H. Geer, who was his helper at Johnstown, and to others who were eye-witnesses of his earlier success in western Kentucky.

Kelly remained at Johnstown for five years. By this time he had conquered. His patent was restored to him, and Mr. Morrell and others bought a controlling interest in it. He was now honored and rewarded. The "crank" suddenly became a recognized genius. By 1870 he had received thirty thousand dollars in royalties and after his patent was renewed he received about four hundred and fifty thousand more. After his process had been improved and widely adopted, Kelly spent no time claiming the credit or basking in the glory of his success. No man was ever more undaunted in failure and more modest in victory. He at once gave all his attention to manufacturing high-grade axes in Louisville, and founded a business which is to-day being carried on at Charleston, West Virginia, by his sons.

When more than seventy years of age, he retired and spent his last days at Louisville. Few who saw the quiet, pleasant-faced old gentleman in his daily walks knew who he was or what he had accomplished. Yet in 1888, when he died, it was largely by reason of his process that the United States had become the supreme steel-making nation in the world. He was buried in the Louisville cemetery, wife is still living.

The Story of Greenwich Hospital

BY F. MOORE IN BRITISH WORKMAN.

There is quite a romance connected with the founding of Greenwich Hospital, the sailors' home of rest. It owes its existence to Queen Mary, though in reality it was William of Orange who actually founded it. The old place is adequately described in the following article.

I.

A LITTLE more than two hundred years ago, on a bright Summer's day, a lady might have been seen pacing up and down the marble terrace of an old house at Greenwich. It was a Royal holiday home, just an easy distance from the noise and heat of London, and none loved it better than Queen Mary, wife of William III. She was fond of the country, and her garden at Greenwich was a great joy. Here she had introduced from her Dutch home the black tulip, the square box-edged beds, the quaintly-cut shrubs, and cockleshell walks, and these are still to be seen. But to-day she was very sad. A great victory had been won over the French at La Hogue by her husband against that powerful monarch, Louis XIV. There had been great rejoicing in London—bells pealing, flags flying, bonfires lit—but the victory, alas! had been gained at a sad cost. Thousands of brave sailors had come back terribly wounded, many of them disabled for life, and it made Queen Mary's heart sick to see these men, who had served their country so well, returning to die in penury, or to limp about the streets, dependent on the chance bounty of some passer-by. She resolved to alter this state of things; such a blot must be wiped away. She looked round on the peaceful landscape and green fields of her holiday home. She and William had many places to go for a holiday. Why could they not turn Greenwich

Palace into a Sailor's Home of Rest?

The Thames was near at hand, with its ceaseless tide of shipping. Comrades would pass by on vessels outward bound; the old men might still enjoy a breath of briny air, and have a chat with chums. Her husband was in Holland just now, but she would speak to him about this pressing matter directly he came back.

It would be difficult to broach the subject, she knew, and her cheek paled at the thought. Mary was naturally shy and retiring, and her husband—cold and reserved, a subtle politician, and a stern soldier—had not helped to make her popular. People misunderstood her, and thought her dreamy and unsympathetic, when she was really only shy and frightened. So it was with some timidity, when her husband returned, that she unfolded the plan so near her heart.

William listened to all she had to say, but did not receive the project with any enthusiasm, and though he did not actually oppose the scheme, took no steps towards its speedy accomplishment.

He always laid his own plans with great consideration, and seemed to think this idea of Queen Mary's sudden and premature.

He loved his wife dearly, though he never let her see it, and he little knew how sad she felt when he told her he must think it over, it would not do to be in a hurry. Thus three

years passed away, and nothing was done. An epidemic of small-pox broke out; the Queen caught it, and was dead in three days. She was only thirty-two years of age, and William was broken-hearted.

"I was the happiest man on earth," he cried to Bishop Burnet, who came to console him, "and am now the most miserable. She had no faults. You could not know — nobody but myself could ever know — her goodness!"

Then he thought of her earnest pleading for the poor sailors, and determined that the most superb monument ever erected should be raised to her memory, to take the shape of a Hospital and Home of Rest.

No time was lost. Sir Christopher Wren was requested to immediately furnish plans, and soon one of the finest edifices in Europe arose—the admiration to-day of all who gaze upon it.

An inscription running round the big hall tells everyone that William III claims no merit for the idea, but gives the entire praise to Mary. Had the King lived a little longer, he intended to erect a beautiful statue of his wife, to be placed in a conspicuous part of the grounds. But that part of the design was never carried out, and few people who gaze on those noble buildings, and all the objects of interest within them, are aware that Greenwich Hospital is a memorial of the virtues of the good Queen Mary, of the love and remorse of William, and of the great victory over the French at La Hogue.

II.

Greenwich Hospital is situated on a terrace 280 yards in length. It consists of four blocks, named King Charles (after Charles II), King

William, Queen Mary, and Queen Anne. They form a most imposing feature in the landscape. On an eminence in the park near at hand, appears the Royal Observatory, and though it has nothing to do with the hospital itself, yet one must say a word about it, for time for the whole of the world is set from Greenwich, and all our clocks and watches would be of no use without it. It was built by Charles II in 1675 on a high spot which was called Flamstead Hill, after the famous man who was the first Astronomer Royal. John Flamstead was born at a tiny village in Derbyshire, and received his education at the Free School of Derby. He became so famous that this beautiful observatory was erected for his sole use. From here he calculated time, the roll of the tides, and many other things which to-day greatly add to our comfort and happiness.

But to return to the hospital. In one of the great blocks is the painted hall and beautiful ceiling. It was once used as a refectory, but now serves as a gallery of famous naval pictures.

The ceiling and walls of this hall were exquisitely painted by Sir James Thornhill. One day, as he was standing on the scaffolding, palette in hand, engrossed in his work, he was stepping back, quite forgetting where he was, when some one fortunately happened to enter, and seeing the artist's peril, began defacing some of his painting on the wall, causing Sir James to angrily rush forward to expostulate, and in this way his life was saved. The pictures hung round the hall are numerous and impressive, showing the greatness and importance of England's navy, and the brave men who ruled it. As you come out of

the painted hall you will probably see youths disporting themselves on the greensward outside before going back to study in one of the four blocks, now a naval college. Why are they here, and what has become of the old pensioners whose blue coats and cocked hats and long yarns were till 1870 the glory of Greenwich Well, it is a long story, and we will try and tell it as briefly as possible before going to see the monuments and naval museum. The hospital—as we already know—was erected by William III in memory of Queen Mary. The King gave £2,000 a year towards keeping it up; then Parliament granted money, and there were large sums also from private individuals, and unclaimed prize money. When the pensioners first went in (in 1738 there were over 1,000 living there) they were very happy, being comfortably housed, clothed, and fed. But in course of years it was noticed that the number of those wishing to enter began to decline, complaints were made of mismanagement, and in 1865 Parliament ordered an inquiry to be made, with the result that it was found the vast revenues had been very much misapplied, and it was thought best to make a clearance of everything and start afresh. Good terms were offered to the pensioners to leave and have money given them instead in the form of out-pensions, in order for them to live with friends and relatives, and most of them elected to do so. By 1870 this system was made compulsory, and Greenwich ceased to be a refuge for seamen. The brass-buttoned, blue-coated old men with wooden leg or arm disappeared from the scene.

For some few of the old men the change was good; for others, alas! it proved the reverse. Temptations

to drink were offered to some, others were neglected by their relatives, and many of them died in miserable circumstances. Three old men absolutely refused to leave. The hospital had been a real home to them, so they were allowed to remain there till their death.

For a time all the buildings remained closed, except the infirmary, which was taken possession of by that excellent institution, the Seamen's Hospital Society, whose hospital ship, the *Dreadnough*, moored off Greenwich, was for years so familiar to all the passengers on the Thames.

One of the old pensioners—Drago by name—is still living in the hospital. He is considerably over eighty, and still able to attend Divine service on Sundays in the Greenwich Hospital Chapel. Seamen from every clime and race are received here, and some few of the poor old Greenwich fellows, who were banished from their original home, are able to end their days here in peace. May we hope that those who spend a pleasant day at Greenwich will not forget to turn in here, and leave a thankoffering for the mercies of health and strength, the infirmary is one of the most useful bits of Greenwich life.

III.

After the pensioners left their old home, the revenues of Greenwich hospital were carefully rearranged, and it was decided to make one of the blocks a naval college for educating naval officers of all ranks above that of midshipmen, and the other block into a naval museum.

But the expenses of the naval college are not borne by Greenwich. The navy pays the hospital £6,500 a year rent, and the money goes in

out-pensions for old sailors, and provisions for widows and orphans, as well as in maintaining the Greenwich hospital school, with its ship on dry land, of which we hope to speak presently. The big block known as Queen Anne's forms the naval museum. There are no less than seventeen rooms in the museum, filled with interesting relics of every description, including those of Alexander Selkirk, Sir John Franklin, and last, but not least, Lord Nelson.

There is a fine chapel connected with the college, richly ornamented, and built in the Grecian style of architecture. But we must now cross the road, and visit the Greenwich hospital school, which, standing apart from the majestic blocks, is apt to be overlooked by visitors. It is close to the Queen's house, the old holiday home from whence Queen Mary looked out and evolved her scheme of helping the sailors, and this historic house is now the residence of the captain of the dry land ship. Here is a splendid school for the sons of seamen; a nursery for the navy girls—daughters of seamen—are helped from the Greenwich funds, 300 being educated at Wands-

worth; but the boys, over 1,000, remain at Greenwich. Here they are thoroughly instructed in seamanship by means of a full-rigged model ship, the work going just the same as if they were in mid-ocean. Fifty-five of the little fellows sleep on board every night, and everything is kept in perfect order and cleanliness—in fact, ship-shape. Besides seamanship, they are taught cooking, washing and tailoring.

The entire control of Greenwich hospital and all its institutions is now in the hands of the Admiralty, and there is a proviso in the charter that should there be at any time, by reason of prolonged naval wars or other adversities, sailors requiring refuge, all the buildings shall revert to the original scheme for which good Queen Mary and William III intended them.

As it is, a splendid work is being judiciously and properly carried on for building up our navy, which, as England develops, requires strengthening in every particular, and no one who has the welfare of our country at heart should lose an opportunity of visiting Greenwich, one of the most interesting places in the world.

Cultivate Men of Purpose

BY MARSHALL FIELD.

The business world is full of young men content in simply putting in their time somehow and drawing their salaries, making no effort whatever to increase their efficiency and thereby enhance their own as well as their employer's interest.

To every young man I would say, seek at the start to cultivate the acquaintance of those only whose contact and influence will kindle high purposes, as I regard the building up of a sterling character one of the fundamental principles of true success.

Afghanistan, the Land of Mystery

BY WILLIAM MAXWELL IN LONDON MAIL.

Afghanistan is shut off tolerably completely from the rest of the world. The railway and the telegraph are tabooed, for suspicion is strong. The central government, made despotic by Abdur Rahman, has tamed all opposition.

AT Chaman you are on the threshold of the land of mystery. No country with which we are connected by close political ties keeps purdah so rigorous as Afghanistan. Nepal you may enter with difficulty, and see the home of the Gurkhas — our allies and brave mercenaries — who live in stern isolation and independence. Afghanistan is forbidden. From the Khyber you may look over rugged mountains and glens and watch the caravans of bearded Afghans and the camels gurgling under loads of merchandise. But Lundi Kotal shuts the gate with a bang. At Chaman your gaze may wander across the great plateau toward Kandahar; but Baldak Spin — the Afghan fort on the plain — sees that your feet do not follow your eyes. If you doubt and are tempted, they will tell you the story of Colonel Yate, who strayed over the border, and was held a prisoner in sight of his regiment.

Not modesty but suspicion has drawn this impenetrable veil across Afghanistan. Yusuf and Isak and Ayub — descendants of the commander of King Solomon's armies and of Jeremiah, son of Saul — know neither modesty nor fear. These untamed children of Israel pray Allah to give them death on the battlefield against the infidel. But Abdur Rahman taught them wisdom in presence of "the lion and the terrible bear, who are staring at the poor goat, and are ready to swallow it at the first opportunity." The goat has with-

drawn into the mountains to grow strong. — Railway and telegraph may not follow, and no alien may approach. For news of "the poor goat" we have only the gossip of the bazaars when the caravans come to Peshawur and Quetta and Nushki. The gossip is good, for it tells that the law established by wise and ruthless Abdur Rahman abides.

In the strenuous days of his youth this "vice-regent of God" — so pitiless Abdur Rahman named himself — learned that when the King of the Afghans strayed a few miles from his capital another king reigned in his stead, and flight was his only refuge. To-day his son is touring through the land. We hear of him at Jellalabad showering rewards and punishment. Yet neither son nor brother has seized the occasion to rebel. This is proof that Abdur Rahman did not live in vain; that feudal lords were not blown from guns to no purpose; that robber chiefs did not hang in cages to no good end. It may be long ere the Afghans set up an Exeter Hall in Kabul, and send missionaries to spread the gospel of Mahommed; but Habidullah need not repeat in anguish the thoughts of his father:

"Fair are the vales well-watered and
the vines on the upland swell,
"You might think you were reigning
in Heaven—I know I am ruling in
Hell."

The Afghans have been tamed for more than a day. A wonderful story is that to which Habibullah is heir.

A quarter of a century ago, when Abdur Rahman was fighting his way to the throne, every priest and every chief of every tribe and village was king in his own might. Tyranny and cruelty were rampant. For a few rupees you might slay your enemy or amuse yourself by cutting off a neighbor's head to see how high it jumped on a red-hot iron. Assassination was a legitimate business and robbery an honored profession. If ambition seized you to become a saint you had only to stick your knife into an infidel and pass unchallenged before the Judgment Seat straight into Paradise.

Unless rumor belies them, Afghans have forsaken these ancient and honored customs and are turning their energies to commerce and industry. It is significant, at any rate, that the Amir is reported to have urged the need for railways and telegraphs. His advisers, however, are opposed to these innovations, and abide by the wisdom of Abdur Rahman, who held that railways make the country accessible to enemies, and must wait "until we have an army strong enough to fight our neighbors." Meanwhile the fierce Pathan has to be content with the telephone, which is said to be spreading its net over the land. If he wants a train instead of a camel he must go to Khushk, where the Russians have a railway which they are anxious to extend to Herat, or he must come to Chaman, where our rails point to Kandahar.

These rumors of peace which trickle across the border and follow the progress of the Amir may be well founded. They are confirmed to some extent by the state of the frontier. Now and again an isolated post is attacked and men are killed for their rifles, or a native is found

stark on the road with a dagger between his ribs and a note explaining that some disappointed Pathan desires to call the attention of the Government of India to his grievances. But these incidents of frontier life are comparatively rare. The tribes who lived by plunder and raid regret the good old times when men lived by the sword and died by a rifle fired from the security of a rock. I met a man the other day who complained bitterly of these decadent days. A tall and stately ruffian in baggy breeches and ample white robes, with a turban over his long black locks—the face of a Hebrew prophet, and bold dark eyes that flash like a sword. He remembers the time when all that he need do to be rich and respectable was to set light to a village and kill a few neighbors. "Now we are women, and must tend sheep and goats, and may not look over the fence."

The fence has a vigilant guardian in General Smith-Dorrien. Warden of 900 miles of wild frontier—of snow-clad mountain and sun-scorched plain—of wild tribes with whom war is a passion and plunder an instinct, he knows every weakness and every strength of the strategic frontier. Stand on the summit of Kojak and look down on the plain and the peaks of snow, and you see the sentinel that keeps watch over India—the strong man, armed and alert in the ice and the sun, waiting for the foe who halts by the way. You may have doubts about the "forward policy," but they will vanish when you ascend from the naked plains through the Bolan Pass and come to the ramparts that nature raised for the defence of our Indian Empire. From Herat all roads lead to Quetta and at Quetta you may bolt and bar the gate to India or throw it open

to strike on front or on flank. Quetta may be approached only from the north or the south. On the north it is guarded by fortified hills, and at Baleli, in the narrow exit from the plain between the cliffs of Takatu and the rugged foothills of Mashelak, are strongly defended lines that could not be turned save by a miracle. From the south an enemy advancing from Seistan through Nushki would have to pass along narrow valleys and over difficult hills capable of prolonged resistance. The citadel of the south-west frontier—strong by nature—has been made doubly strong by art, and under the new redistribution scheme will have a garrison of two complete divisions.

India has, therefore, a double defence—the frontier and Afghanistan. The late Amir made no secret of his

dependence upon the British in the event of an invasion. His successor has hinted that he is not necessarily bound by the engagements of his father. He has, however, shown no disposition to depart from the policy of Abdur Rahman, and has directed his energies to the peaceful development of the country. He has given no countenance to those frontier intrigues which encouraged chiefs of bordering tribes to be Afghans in Summer and British in Winter, ready to accept money and robes of honor from each in turn. The system of frontier levies has removed temptation to this double dealing, and has tended to convince the Afghans that we have no designs on their country and no desire save to see them a strong and self-contained nation.

Education in the Northwest

BY CHARLES H. HUESTIS IN WORLD TO-DAY.

Mr. Huestis is lecturer in philosophy and logic in Alberta College, Edmonton. He writes with intimate knowledge of conditions in the West, paying particular attention to the work of his own college.

NO question is of greater interest to the thoughtful people of the new West than that of education. The most important issue at the late elections, the first since the entrance of the two provinces of Alberta and Saskatchewan into provincial status, was that of separate as against national schools. The Antonomy Bill embodied the principle of separate schools for religious minorities, and this proposition was supported by the Liberal candidates; while the Conservatives declared for purely national schools. The verdict of the people, if the results of the elections can be taken as that, is by

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no means uncertain. In Alberta a solitary Conservative will uphold the views of the party against twenty-four sturdy Liberals. In Saskatchewan, owing to the aggressive fight and strong personality of Mr. Haultain, late leader in the Territorial House, the Conservatives have won eight seats and came within a few votes of winning three or four more.

It is doubtful whether the principle of separation in public school education will be attacked, at present at least. It must be remembered, however, that in the system in vogue teachers in the separate schools are required to pass the same examina-

tions as those in the national schools. The text-books in both classes of schools are also the same with one exception. In the lowest grades of the Roman Catholic schools it is permitted to use readers containing some instruction in religious dogma. Nevertheless, though the evils incident to religious schools have been somewhat eliminated by the above provisions, the system spells separation in education, and there are many thoughtful people in the West who see trouble ahead. Large numbers of intelligent Liberals voted the Conservative ticket at the late elections because it seemed to them that the historic principles of Liberalism had been forsaken by their own party. It may be that the Liberals, having gained power in the West, will gradually drift back to their old position, and the banner of provincial rights will again be seen raised above its hosts.

At present there is only one institution in the two new provinces giving instruction in university work, Alberta College, in the city of Edmonton, the capital of Alberta. The story of its founding and subsequent career is illustrative of the spirit of the West.

About two and one-half years ago a number of men sat together in council. They aspired to be the founders of a new institution of learning to be located in the most northerly city in America, except Dawson City in the Yukon. The initial stages of the movement had been passed, the consent of the church-governing body (for the new college was to be a Methodist venture) had been given, and a sum of money pledged by the citizens sufficient to meet the needs of the first three years. Only one important requirement remained to be met,

namely, the appointment of the principal; and the man they wanted was down with typhoid in the city hospital. The moment was indeed un-auspicious to offer the position with hope of acceptance. What if the man of their desire turned the proposition down? Where should they look for another? Perhaps it would be wiser to wait a year. That was the counsel of the Wise Man from the East who had been deputed by the church to aid the young western enthusiasts. "Better wait," he said. The group of men sat for a few moments in silence. Then one of them rose to his feet. "I move," he said, "that we begin at once." The motion was put and carried unanimously. To the man in hospital, burning with fever, the Wise Man from the East and another offered, on behalf of the directors, the position of principal, and the offer was accepted.

On October 5, of that year, the principal-elect sat in one of a suite of rooms engaged as temporary quarters and waited all day for a pupil. None came. He was there again the next morning promptly at nine o'clock. At 10.30 a.m., three men entered the room. Two of them were "sky pilots;" they were steering into the harbor the first student, and the work of Alberta College had begun. The second year closed with 180 students registered in all departments, and a staff of eleven professors and lecturers actively employed. A college building, costing with equipment over \$20,000, was finished and in use during the year; all the bills were paid and there was a balance on the right side. The college has commended itself to the people of Alberta. Last Summer the college building was more than doubled in size, and at the time of

writing, is filled to its utmost capacity.

The aim of this institution is to meet the educational requirements of the Canadian Northwest without invading the field already well occupied by the public and high schools. No student, no matter how small his educational equipment, is refused admittance. Instruction is given in arts, including matriculation and the first two years of university work; commercial work, including stenography and typewriting; music, both instrumental and vocal; elocution and physical culture. There is also an all-comers' course for young men and women whose early advantages were few and who could not now enter the public schools except in the lowest grades. This course has proved to be a great blessing to a number of young men and women during the past years.

The ideal of the college is a preparation for life. "*Non scholae, sed vitae*," sums up its purpose. To bring the young men and women of the West who enter its halls to understand life in its true meaning, and to help them to prepare themselves for its service, is the aim the

instructors constantly keep before themselves. Hence manhood and womanhood stand for more than scholarship, however important that may be, and, in the phrase of the college motto, "*Mores sunt maxima*," right habits are the big thing.

The future is full of promise. A school of domestic science is to be the next addition, so that the daughters of the west may be equipped to become the homemakers of to-morrow—ladies in the old generic meaning of that much abused Saxon word, as wise breakers of bread.

Here, then, is the nucleus of the higher education of the Canadian greater west, and it is probable that along these lines farther movement will be made. Hon. Mr. Rutherford, Premier of Alberta, has stated his intention of bringing in a University Bill at the first meeting of the Legislature in March. Beyond this nothing definite is settled. How to build up a system of higher education upon these prairies that shall be free from the dominance of political and religious institutions, and which shall at the same time be deeply religious and broadly educative, is the problem at present before the people of these provinces.

While the Iron is Hot

A man who has done a great deal of literary work has found it a most excellent rule to turn aside, if possible, even in the midst of an absorbing task, for the purpose of looking up at the moment any reference that touches his curiosity. At times the curiosity can be satisfied by a moment's reading; if more is required, it is easy to make a note and return to the matter at leisure; but often it will be found a fatal error to put aside a question without jotting down some memorandum. The time to fix a fact in memory is when that fact is first introduced to the mind and the interest in it is keenest.—St. Nicholas.

A Pioneer Canadian Manufacturer

BY FRASER S. KEITH.

By the death of John Bertram, of Dundas, which occurred very suddenly on April 4, Canada has lost one of the men who laid the foundation of her industrial life. Coming to Canada more than fifty years ago, he soon established the business in Dundas, which to-day bears his name and is typical in its extent and worth of the man who built it up.

WHAT the name of Carnegie is to the iron and steel trade of the United States, and that of Edison or Westinghouse to the electric and allied industries, so has the name of John Bertram, of Dundas, been to the machine tool interests of Canada. From the quiet serenity of a peaceful old age and the fruitful enjoyment of the success of a well spent life, John Bertram was called suddenly as he was preparing to leave his residence for his office on April 4. Without a moment's warning the summons came, causing sorrow, deep and lasting to his immediate family and friends, and regret, genuine and sincere, not only to his fellow townsmen, but to the entire manufacturing interests of the Dominion. While the name of John Bertram will live in the large and important industry that bears his name, those who knew him personally will cherish his memory on account of his attractive personality, rather than as the man, who, more than any other, made the name of his adopted town known from the Atlantic to the Pacific or the man who stood the test as a captain of industry or as a leader of men.

To be respected and esteemed is given to many, but to stand in the fierce light that beats upon a man in an exalted position and be beloved by all, comes to few, but such was the case with the late Mr. Bertram. The silent music of his life, his bright blue eyes, clear complex-

ion, the native Scotch accent, his kindly smile and fatherly interest in others, all united in drawing men to him and made him one who touched the inner lives of his fellows. While genius was in his make up, energy, perseverance, courage, and integrity were the dominant qualities that after his landing in Canada were to win the name and fame that came to him and that placed him in the forefront of the machine tool trade of the Dominion.

On Sept. 13, 1829, John Bertram was born at Eddlestone, Peebleshire, Scotland, his ancestors being pioneers in the millright industry in the south of Scotland. Until fourteen years of age he attended the parochial schools there and during that time he received his first inspiration in mechanics in operating a foot lathe belonging to his grandfather. He soon became an expert turner and was a great favorite amongst his classmates whom he kept supplied with spinning tops or peeries, as the boys called them. In his fourteenth year he moved with his grandfather to Galashiels, a town celebrated in that day for the manufacture of tweed cloth. After two years attendance at school there he became an apprentice with his uncle, Thos. Ainers, of the Waverley foundry.

The life of an apprentice in those days had few of the attractions of to-day. The time to be served was five and a half years and the remuneration during the entire period

was six shillings a week. Besides this, the work carried on in the early forties was not easy. If the aspiring young machinist, whether from necessity or principle, refused to pay his footing (which meant a glorious time in some public house) it was counted against him. He dare not give any opinion on a mechanical subject and high words and worse were his common lot. Happy was the apprentice who had the grit to stand his ground or hit back if required and consider it as the general order of things. When young Bertram suggested to a journeyman an improvement in the shape of cutting tools instead of the old grubo hoes, the latter stopped, amazed at his impertinence, and said: "Johnny, when you are a journeyman you can shape your cutting tools as you think fit, but don't dictate to me."

In later years Mr. Bertram felt that life in his youth was in one sense a good training school, as he always profited by the mistakes of his elders and never harbored any hard feeling, for in four years he found his place and was able to exercise his own judgment.

The machines in the shop where his apprenticeship was served were of the most primitive type, the lathes had wooden shears and turning was done with slide rests. The proprietor, a skillful engineer, was determined on a change, and installed a set of lathes with ponderous iron frames set upon heavy stone foundations. They were powerfully geared. This change was justified on account of the future class of work which was made a specialty by this establishment. The class of machinery made until this time was textile machinery, such as carding, spin-

ning and the complicated machines required for producing the fine wool-len tweeds which have made a world-wide name for this district. Mr. Aimers decided to drop out of the competition with English makers of textile machinery and confine himself principally to steam engines, water wheels, shafting and gearing, as at this time a large number of factories were built on the Tweed and its tributaries. In this class of mechanics the young apprentice had good scope for his ability and made many improvements on machine tools and appliances.

Like all imaginative mechanics he had a hobby, and being always attracted by electric science, in 1848 he spent his spare evenings constructing a direct current machine. In partnership with a brother workman, they prosecuted this hobby for a time, but his friend became alarmed when he saw the expense and realized what lay before him, and withdrew. So Bertram plodded on alone, constructed a machine for insulating the wire, which completed over one hundred feet every evening and finished his electric machine in a few months.

In May, 1852, Mr. Bertram entered married life, taking as his partner, Elizabeth Bennett, from Roxborough-shire. About that time he made up his mind to come to Canada and with his young wife he set sail from Glasgow on a barque of 1,000 tons register, belonging to the Allan Co. A few weeks before landing a large part of Montreal city had been burned and presented a desolate appearance, so they decided to go to Toronto, arriving in the city by the steamer *New Era* on a beautiful morning. To use Mr. Bertram's own words, "Dressed in our Sun-

day brawls, we stepped on the wharf at the foot of Young street. There was no esplanade, no railway and none of the landmarks that characterize the city to-day, and Toronto did not look very inviting at that time. While looking at the novel surroundings, so unlike the Broome-law pier, our appearance attracted the attention of Mr. Duff, of the Inland Revenue Department, who was watching the arrivals. He came up and asked us where we came from and, finding I was a machinist, said: "Go straight to Dundas and you will find a situation in the John Gartshore foundry." Dundas? Dundas? I inquired. I never heard tell of it. "Well," said Mr. Duff, "continue on the boat to Hamilton and you will find Dundas."

The manager of Gartshore's foundry was the late William Gill, Esq., a Galashiels' engineer and well known at that time to Mr. Bertram, who was immediately engaged. The tools here were of a very antiquated pattern, except an American lathe, charge of which was given to Mr. Bertram. It had no changeable feed and required fifty turns of the work for one inch of traverse. The mechanical genius of the man exhibited itself here and he immediately set to work to put a variable speed on the lathe and so doubled the output. At this time these works were building the engines for the steamer "Queen of the West," and latterly the first engines of the Hamilton water works, of which a large part of the work was machined by Mr. Bertram. During these years not only was his inventive ability given scope, but also the development of a keen business sense was begun.

In 1865 he joined partnership with

Robt. McKeeine under the title of McKeeine & Bertram. This business was carried on for twenty-one years and when the senior partner retired it was continued as John Bertram & Sons and later incorporated as a joint stock company. During all this time new lines were being constantly added to the output, improvements made in existing methods and business reached out after from ocean to ocean until the firm became the best known of its kind in the country. Last Summer the business was incorporated with the Niles-Bement-Pond Machine Tool Co., the largest builders of machine tools in America, having the parent Niles works in Hamilton, Ohio, the Pond works in Plainfield, N.J., the Bement works in Philadelphia, as well as the electric crane department.

During his many years residence in Dundas the late Mr. Bertram was one of its foremost citizens and exercised a keen interest in promoting its welfare. He was a councillor for many years and held the offices of reeve, deputy reeve and mayor. In religion he was a Presbyterian and in politics a reformer.

From the strenuous activities of his business life Mr. Bertram found time for deep and extensive reading as well as leisure for several trips to his native land. Only a few days before his death as he sat smoking his pipe in his office and growing reminiscent over the changes that had been wrought since his young manhood, he related to the writer an incident on one of these trips which showed the thoroughness of the man. One of his early undertakings, after learning his trade, was the building and installing of a water wheel, after many weeks of laborious work. Forty years afterwards he visited the mill

where the wheel had been placed. He found that it had been running continuously for the operation of the mill during that period, was then running and during all those years had never cost a shilling for repairs.

He dearly loved to delve into the histories and mysteries of earlier civilizations and on the subject of recent archaeological discoveries he was an authority. The Bible also was a feature of his reading, as his intimate knowledge of its contents revealed. Natural science was all absorbing, resulting in a deep insight into several of its branches.

Despite advancing years he kept

in close touch with business matters as well as the general affairs of current history, and was keenly alive to the industrial changes and the advances that succeeding years have brought about.

A typical example of the hardy Scotchmen who have risen to the top in whatever clime circumstances find them, his death severs another link of the chain connecting with the past and removes another pioneer who has helped to lay sure and broad the foundation of a young country and leave it on a stronger and higher elevation than he found it.

Grin and Bear It

It's easy to smile and be cheerful
When everything's pleasant and fair ;
We never complain of life's hardships
When there are no burdens to bear.
But soon as the blue skies cloud over,
And the way that was smooth has grown rough,
We forget the blithe songs we were singing,
And our faces are doleful enough.

But some can be cheerful when shadows
Are thick round the pathways they tread ;
They sing in their happiest measures
With a faith in the blue skies o'erhead.
They face with a smile that's like sunshine
The trials that come in their way,
And they always find much to be glad for
In the loneliest, dreariest day.

Thank God for the man who is cheerful
In spite of life's troubles, I say ;
Who sings of a brighter to-morrow
Because of the clouds of to-day.
His life is a beautiful sermon,
And this is its lesson to me :
Meet trials with smiles and they vanish ;
Face cares with a song and they flee.

A Young Man's Prospects in Banking

BY NATHANIEL C. FOWLER, JR.

Mr. Fowler's advice is that, if a boy has no pronounced tendency towards any other calling, and is careful and methodical, he would make no mistake in entering a bank.

THE question is asked, what kind of a boy will make the best banker? This question is exceedingly difficult to answer. The boy fitted to be a lawyer shows distinct characteristics, which may guide the parent; the boy adaptable to the ministry presents unmistakable tendencies, but the to-be-banker boy may not have any characteristics by which one can determine, with any degree of accuracy, whether or not he is well suited to banking. There are hundreds of boys who will not make good bankers; the careless boy, the boy who takes no thought for himself or for others, who can not be depended upon, who knows little of figures, and wants to know even less than he does know, who is always behindhand, and who is unreliable, will not make a good banker. Then there is another kind of boy, who is not adapted to banking, and that is the boy who has an unmistakable and justifiable tendency in another direction. The boy more fitted by nature to be a lawyer, doctor, minister, or journalist may make a good banker, but he will make a much better lawyer, minister, or journalist than he will banker.

Perhaps the best advice I can give to the boy who is considering banking is to tell him to enter banking if he is positive that he has no pronounced tendency in some other direction, and is sufficiently careful and methodical, is one who seldom makes a mistake with his pencil or with his pen, and who is reliable in every sense. This boy, if he chooses banking, will make his living out of it;

and if he has business sagacity, will rise from the ranks. But I must admit that the boy of much business capacity, the boy with a natural trading tendency, will stand a better chance in regular mercantile work as a salesman than he will in the banking institution.

And yet I do not wish to give the impression that I do not think banking offers good opportunities, for it does. The boy adapted to banking, who is careful, exact, and with fair education, is pretty sure of a good living, perhaps of the comforts of life, and I may say that he is even surer of a living than is the salesman or other mechanical worker, because there is a permanency about the bank which exists in few other classes of business. Yet the opportunities offered by the bank to the bright, aggressive boy are not as great as those presented by a mercantile house. In other words, the bank draws a line beyond which there is little possibility of going. Inside of that line there is a reasonable certainty of a living success. The mercantile business does not draw any line of limitation, but the work has more of the element of risk and speculation.

Perhaps the most serious objection to entering the banking business is that after one has become imbued with the work of the bank he is of little use in anything else, and if after his prime the bank fails, or he leaves it for any other cause, he is to a large extent unfitted to enter any other calling. But this objection is not necessarily confined to banking. Comparatively few men who are

thrown out of work after they reach the aged side of their prime can easily adapt themselves to other things, and, therefore, business failures can earn comparatively little and are objects of pity, unless they have in the meantime saved a competency.

The banking business, as a rule, does not broaden one's ideas. It confines one largely to finance, or, rather, to dealing with the mass of detail having reference to the handling of the money of finance. It does not generally carry him out into the great open where he can see men and things from the broadest viewpoint. The bank clerk or bank officer is, to a large extent, confined to his banking room. True, he meets all kinds of men and gets an insight into all kinds of business, but he only comes into direct contact with the financial side of those men. He sees them when they have money to deposit and when they want to borrow money. He sees them when they are flush and when they are in need. He does not see them in the action of their business.

But, again, let me say that this condition is not confined to banking. I simply want to prevent the boy from rushing into banking, as I want to prevent him from rushing into any other calling. I must repeat that, while banking is a good business, I would not advise any boy to enter a bank unless he finds that he has not, and shows that he has not, unmistakable and marked ability or well defined inclination in some other and broader direction.

Mr. Frank H. Barbour, cashier of the National Shawmut Bank, of Boston, says:

"In response to your request I will give you some reasons why I would advise a boy to enter the banking business.

"Of course, I assume that he enters business life with the determination to succeed, otherwise this business has no place for him. Assuming, therefore, that he is in earnest, I would advise him to enter banking because it is a clean, honorable business, commanding the respect of the community, and deservedly so, for, though it has its defaulters, whose betrayals of trust are always spread before the public under heavy headlines, their percentage to the number in the business is creditably small, a tribute to the integrity of the members of a profession in which temptations to dishonesty are great.

"Banking is among the oldest lines of occupation, and so long as the business world exists it must have facilities for the safe keeping of its funds and the handling of its credits. The boy, therefore, who enters banking, determined to make himself valuable to his institution, may feel more assured of a permanent situation than one who enters business life as a clerk in a mercantile establishment. The chances of the failure or withdrawal of his institution from business are less. His income may be smaller than that of the average business man, but it is assured and regular, and, knowing this, he can adjust his expenses accordingly, laying by monthly the little sums which will in the end provide for his comfort when he is retired, and, let us hope, reasonably pensioned.

"Availing himself of the shorter hours of office work than the average clerk, or even business man, enjoys, the bank clerk may improve his opportunity to indulge in some healthful form of out-of-door amusement, or the study of some natural science, perhaps irreverently called a 'fad,' which will clear the cobwebs from his brain and make him a broader, better

man. The tendency of the times is to more intense application during business hours, making necessary more frequent intervals of rest and relaxation. The bank clerk is perhaps in a better position to avail himself of such relaxation than are others.

"Banking furnishes large opportunities for the development of the faculty of reading character and forming rapid, accurate judgment of men. The good banker must have the ability to say 'No,' and if he can say it in such a way as to keep the good will and respect of his clients, he has tact which all must acknowledge.

"This business also furnishes opportunities for the study of the great financial problems of the day, as well as for the development of honest impartiality. Who can better serve the interests of the business world than the fearless, conscientious banker, before whom, in the exercise of his duty as the lender of the money others have placed in trust with him for that purpose, come the financial statements of would-be borrowers to be analyzed and sifted, and on which he must pass judgment, meting out proper lines of credit to the deserving, and with keen perception detect-

ing the weak points or false representations of the unworthy? The business world depends upon such men in a large measure for its safety and success. It should be the ambition of the young man to prepare himself for so honorable and important a position.

"The boy who enters it must give up the ambition, which all have, for the accumulation of large wealth, and while he may, perhaps, see those who entered business life with him, by some fortunate speculation gain sudden wealth, he must, by virtue of his position, avoid all speculative ventures and make up his mind to be contented with a modest income in return for faithful services."

Mr. Douglas H. Thomas, president of the Merchants' National Bank, of Baltimore, says:

"I would state that the banking business is considered a most honorable profession, and a knowledge of its details will always prove of immense service to any one engaged in any of the occupations or professions of life. To any one who continues in the business and shows ability and aptitude, a good position is always assured with proper compensation."



The Correct Thing in Men's Dress

BY BEAU BRUMMELL.

An authority on men's wear discusses the styles for Spring, showing the materials that will be in favor, the cut that will be followed, and the various shapes in hats, etc.

NOT many changes will be noticed in the Spring and Summer styles in men's clothes this year. It will without doubt be a worsted season. It is hard to understand why this should be since these goods are higher now than they have been for many a long day. In sack suits the coat style will show some change. Both single and double breasted will be worn although the latter is dying out, and is not likely to have the sale this season as the former. In passing it is interesting to notice that many of the peculiarities of the double-breasted coat are being adopted for the single-breasted. For instance, tailors are cutting the latter almost straight down the front, giving it but a slight curve at the bottom which is hardly noticeable at a little distance. The long-pointed lapel and closely-fitting collar, peculiar to the double-breasted coat, will also be introduced on the single-breasted. The coat will be about the same in length as that worn last year, although perhaps a trifle shorter, and the buttons will be three in number. A medium centre vent a little shorter than usual is promised and doubtless a few side vents will be offered, but the former are preferable. There is some talk of ventless coats, owing to the vent becoming so common, but the sales of vent coats this year will not be materially affected.

The single-breasted waistcoat will show few changes. The colors are

not so many and varied as they were in the Fall of 1905. There is a tendency to quieter colors. Waistcoats trimmed in braid matching the material of which the former is made will be popular. White flannel waistcoats trimmed with white silk braid of the same color are very dressy and neat in appearance, and will be good sellers. Trousers show little change. They will not be as loose at the hips as they usually are and the ankles will fit more closely, but otherwise they will remain unchanged.

Four-in-hands still continue leaders by a wide margin and the most noted tendency, as the season progresses, is the steady demand for widths around two inches. The fold collar, no matter what may be said against it, is the ever popular type, and the extremely wide tie has been found clumsy to wear effectively with this style. Collar shapes with wide fronts have been brought out, to allow for the wide tie, but this does not get at the root of the trouble. It needs a great deal of tugging to bring the tie into shape and oftentimes the silk tears and the lining is generally destroyed. Manufacturers have sought to avoid this by sewing the lining right into the silk.

Regarding the colors in shirts for Summer and Fall a great deal might be said. Light colors seem to be in great demand, but nevertheless dark patterns are not by any means neglected. A somewhat awkward situ-

ation exists in these. The demand for dark goods cannot be supplied because manufacturers are unable to obtain the dark cloths from which they make up these shirts. These cloths are supplied by Canadian mills to the manufacturers, who every year buy certain quantities. This year the latter evidently did not figure correctly upon the demand there would be for colored goods, and consequently they have run out of this cloth and have only a very small quantity of these materials in stock—not nearly enough to fill the demand. More cloth might be obtained, but not in time for manufacturers to fill either Summer or Fall orders.

Plain white Madras shirts will probably sell as well as any for Summer wear. Light grounds, too, with dark stripes of black, blue, brown, helio and pink will be asked for both during Summer and Fall months. Dark floral and scroll effects on white ground will also meet the popular fancy for these seasons. Plaids when not too loud will hold a share of business. Plain whites in brocade cord, Bradford cord and matalasse are among the offerings for Summer and Fall. These are made up in negligee form to wear with a white collar.

Business in colored shirts is going to be very large. Shirts with cuffs attached are gaining in favor for country trade, although detached cuffs are still in the majority for that trade. One fault men find against the American made detached cuff is the fact that the stub for the cuff button is placed at the end of the cuff, unlike the Canadian method of having the stub in the middle of the cuff. The fault lies in the fact that while with the Canadian cuff a

man may have a clean pair of cuffs all week by reversing them when one end becomes soiled, with the American cuff this is impossible. Another fault some find with American shirts is that the cuffs are not long enough. This latter point is, however, purely a matter of taste.

Spring hat displays emphasize the predictions made long ago that the present season would be essentially another stiff hat one, with the black Derbys far and away in the lead. City trade shows a decided preference to the flat-brim Derby, and the younger element have at last taken these hats up with enthusiasm. It is the young men who keep up the bigger share of the trade and they have evidently decided that the curled brims have had their day. Conservative shapes are still asked for by business men.

Light colors in soft hats are being shown. Evidently the brown Derby, which did well for a short period, is down and out. City stores again show them, but jobbers have lost heart in pushing these goods, although they carry stocks of good size. The tourist and fedora shape in soft hats are sure to do the larger share of the business, although the college shapes for young men have been ordered out well. Every house is uniting in talking strongly pearl soft hats for late Spring trade, and preparations have been made accordingly. Advance orders for straw hats exceed previous seasons, as retailers realize the virtue of prompt and early deliveries resulting. Thus far sailors of the split variety have done the bigger share of business. The high crown with a moderate brim is favored. Colored hat bands are well spoken of and will be seen in profusion. Some of the jobbing

houses are going into Panamas quite extensively. Some new ideas in French straw hats have been introduced.

Spring cap trade is all that can be desired and the golf shapes in tweed and serge are, as usual, prevailing styles. The wholesale trade is now looking towards Fall in hat lines, although many firms do not

show stiff hats until much later in the season. However, all cap lines are now out, and judging from the size and variety of the lines a greater sale than ever before will take place. The tweed hats, which had to be sacrificed last season, are again shown, but without much enthusiasm. They are expected to do a fair amount of business only.

The Power of Attention

CENTURY MAGAZINE

The fact that the mind of man is easily distracted from any subject in contemplation accounts for the slowness of the development of most minds, and for the extreme slowness of the development of the human mind collectively. There are historical periods when general enlightenment seems to have advanced by leaps and bounds; but when one takes cognizance of the tens of thousands of years that man has been at play in the Kindergarten of Creation, one is aware of the very gradual and delicate character of human progress as a whole; and this deliberateness of growth, and the remains of ignorance and superstition even in minds regarded as educated, come largely from the inability of men to keep their thoughts employed steadfastly on the various objects and problems of matter, mind and life. The faculty of attention is strikingly lacking in the savage man; it increases as civilization increases, and is a large factor in the advance of civilization and of culture.

When the power of attention is exceptional in the individual, he is set apart from his fellows; he is a genius in the business world, or perhaps a poet, artist, inventor, discoverer, philosopher, reformer, statesman or conqueror. When the power of attention in a community has been stimulated by one attentive mind, or by a group of attentive minds, the world

passes through periods of great mental activity; great reforms take place; there is great material or intellectual advance; or there are revivals in letters and in the plastic arts.

The supreme object of the teacher is to cultivate attention in his or her charges. When a child has learned how to pay attention, he has learned how to study and to learn. "Object lessons" are favorite devices for fixing attention. According to the orthodox theologies, religion has been taught to mankind largely through object lessons, in the form sometimes of "progressive revelations"; and the system of symbols in all religions may be called simply devices for fixing the wandering attention of souls, for their sustenance and lasting benefit.

We see, year in and year out, the coming and going of beliefs, customs; popular heroes or mere popular pets; best sellers among books; sports, movements and fads of all kinds, which figure prominently only as long as they are able to claim the attention of large groups or of the entire community. The whole system of business advertising, and the infinite number of publicity departments—publicity as to all sorts of wares and all manner of causes—are nothing but means of securing attention; of spreading information and inducing action through suggestion.

Other Contents of Current Magazines.



In this department we draw attention to a few of the more important topics treated in the current magazines and list the leading contents. Readers of *The Busy Man's Magazine* can secure from their newsdealers the magazines in which they appear. :: :: :: :: ::

AMERICAN ILLUSTRATED.

A capital story by the author of "Pigs is Pigs" is to be found in the April issue, entitled "The Day of the Spank." There are also several other good short stories in the number. Other contents:

Justice of the Supreme Court. By Frances B. Johnson.

Light: The Civilizer. By David T. Day.

Sir H. Campbell-Bannerman. By Arthur H. Goodrich.

From Yerkes to Dunne. By Henry K. Webster.

AMERICAN INVENTOR.

The April issue of this instructive periodical has two excellent articles in "Modern Methods of Making Beet Sugar" and "Rubber Culture in Mexico." Both are illustrated.

Modern Methods of Making Beet Sugar.

A New Russian Flying Machine. By A. F. Collins.

Electrically Manufactured Music.

The Heavens for April. By Prof. McNeil.

The Percival Concrete Tie. By H. M. Riseley.

Perfecting an Invention. Part II. By W. H. Bach.

Rubber Culture in Mexico. By J. B. Main.

The British Battleship Dreadnaught.
Submarine Amusement Railway.

BOOK MONTHLY.

The April Book Monthly is as usual most readable. Between the "Personal and Particular" paragraphs in the first pages and the list of "Books of the Month" at the end, the interval is filled with such articles as:

If I Were a Publisher. (What Mr. Clement K. Shorter would do.)

Southward Ho! To Eversley, the Home of Charles Kingsley. By W. J. Roberts.

A Derelict Novel. By Charles M. Clarke.

The Pen and the Book; or Wisdom for Author and Publisher.

Robert Louis Stevenson as a Mother's Son.

APPLETON'S BOOKLOVERS.

Four reproductions in color of American landscape paintings are a notable feature of the April number of this periodical. The contents are in general excellent, with a decided leaning to the serious. A special writer is investigating conditions at Panama for the magazine, while another is laying bare the corruption in Alaska's administration. The fiction is of a high order of merit. Contents:

The Mystery of Ancient America. By Broughton Brandenburg.

Tom Johnson: A Type of the Common-Sense American. By David Graham Phillips.

Our Beneficent Despotism. By Clifford Howard.

On the Boston Post Road. By E. W. Kemble and Walter Hale.

The Evans Collection of American Paintings. By Leila Mechlin.

The Modern Public Library. By Hamilton Bell.

The Truth about Panama. I. Sanitation and Colon. By Henry C. Rowland.

The Looting of Alaska. IV. The Reign of Terror. By Rex E. Beach.

Our Mexican Investment. By Edward M. Conley.

ARENA.

A portrait of Stuyvesant Fish appears as frontispiece of the April Arena, and there are also excellent page portraits in the number of Judge Lindsay, W. A. Rogers and Helen M. Gougar. The contents are as usual of an economic and sociological interest.

Trafficking in Trusts; or Philanthropy from the Insurance View-Point. By Harry A. Bullock.

Federal Regulation of Railroad Rates. By Prof. Frank Parsons.

Judge Lindsey: A Typical Builder of a Nobler State.

Main Currents of Thought in the 19th Century. By Robert T. Kerlin.

The Single-Tax. By John Z. White.

College Co-Operative Stores in America. By Ira Cross.

Helen M. Gougar: A Noble Type of 20th Century American Womanhood.

America in the Philippines. By Helen M. Gougar.

The Coming Exodus. By Arthur S. Phelps.

Divorce and Remarriage. By Henry F. Harris.

The Color-Line in New Jersey. By Linton Satterthwait.

Mayor Johnson on Municipal Control of Vice.

ASIATIC QUARTERLY REVIEW.

To any person who has ever visited or lived in India, or elsewhere in Asia, the Asiatic Quarterly Review will be found of deep interest, while to others its pages will afford instructive reading. The April issue contains:

Civic Life in India. By A. Yusuf Ali.

Young India: Its Hopes and Aspirations. By Shaikh Abdul Qadir.

The Partition of Bengal and the Bengali Language. By S. M. Mitra.

Madras Irrigation and Navigation. By General J. F. Fischer.

Northern Nigeria.

Arabic Verbs. By A. H. Kisbany.

The Souls of Black Folk. By R. E. Forrest.

The Yunnan Expedition of 1875. By General H. A. Browne.

ATLANTIC MONTHLY.

The Atlantic Monthly for April is a standard number with the usual range of valuable contributions on

art, music, education, law, finance, politics, etc. The publishers endeavor to provide a thoughtful article on some phase of each of these subjects. A group of noted writers contribute to the April number. Contents:

Making Education Hit the Mark. By Willard Giles Parsons.

The Reform in Church Music. By Justine Bayard Ward.

The Tenth Decade of the United States. VI. 39th Congress. By William Garrott Brown.

Criminal Law Reform. By George W. Alger.

A Plea for the Enclosed Garden. By Susan S. Wainwright.

The Testimony of Biology to Religion. By C. W. Saleeby.

Railway Securities as an Investment. By Alexander D. Noyes.

Questions of the Far East. By John W. Foster.

What Shall We Do With Public Documents. By William S. Ros-siter.

Tide Rivers. By Lucy Scarborough Conant.

BADMINTON.

Illustrations in the Badminton are always beautifully executed and, as there are a great many of them, an opportunity of looking through an issue is seized with delight. Naturally sports and pastimes are the main topics.

Sportsmen of Mark. VI. Captain Wentworth Hope-Johnstone. By Alfred E. T. Watson.

Hunting in the Middle Ages. By the Baroness S. von C.

The Coming Cricket Season. By Home Gordon.

Big-Game Shooting at Lake Baringo. By C. V. A. Peel.

The Racing Season. By the Editor.
Scouts and Outposts. By Claude E. Benson.

Betting. By G. H. Stutfield.

The Art of Failing. By Lilian E. Bland.

BRITISH WORKMAN.

The contents of the British Workman, though few in number, are always good. In the April number:

Some Reminiscences of the Late Dr. Barnardo. By one of His Helpers.

A Wonderful Vessel. The "Carmania." By F. M. Holmes.

Men Who are Working for Others. 3. Robert J. Parr. By H. Davies.

The Founding of Greenwich Hospital.

BROADWAY.

The April Broadway is a bright number, with several features worthy of note, apart from its list of short stories.

Wireless Telegraphy as It is To-Day. By Lee de Forest.

New York's Animal Hospitals. By Anna Mason.

A Roman Easter Celebration. By Raffaele Simboli.

Magnetism vs. Art in the Actor. By Orrin Johnson.

Trade Schooling for Young Men and Women. By N. C. Marbourg.

Fun and Facts of Mountain Climbing. By Annie S. Peck.

CANADIAN.

A series of pictures of scenes in the life of Christ reproduced in tint from celebrated paintings is a leading feature of the April issue of the Canadian Magazine. A valuable article on the Grand Trunk Pacific with portraits of the directors is contributed by Norman Patterson. The other contents, both prose and verse, are well up to the high standard of the magazine. Contents:

The Orinoco—A Wasted Waterway. By G. M. L. Brown.

The Grand Trunk Pacific. By Norman Patterson.

The House of Lords Question. By H. Linton Eccles.

Reminiscences of a Loyalist. By Stinson Jarvis.

A Canadian Painter and His Work. F. S. Challener. By J. W. Beatty.

Canadian Celebrities. No. 69. W. D. Lighthall. By R. S. Somerville.

The Farmers and the Tariff. By E. C. Drury.

CASSELL'S.

Fiction in Cassell's Magazine can always be recommended, and the April issue contains some good stories by such skilled romancers as H. Rider Haggard, Major Arthur Griffiths, Mavne Lindsay, Edwin Pugh and Arthur W. Marchmont. The more serious contents are:

The Story of Harry de Windt. By Raymond Blathwayt.

Dulwich Picture Gallery. By James A. Manson.

The Story of the Cotton Growers. By G. T. T. Buckell.

Old St. Paul's. By W. W. Hutchings.

Lighting London. By Walter T. Roberts.

CASSIER'S

Magazine contains many interesting illustrations, which are admirably reproduced on the heavy coated stock on which this magazine is printed. In fact, the illustrations in Cassier's are one of its best features. The April table of contents is extensive.

Engineering in the Logging Industry. By Henry Hale.

The Field of Electric Direct-Current Service. By H. L. Abbott.

Electric Central Station Advertising. By Charles H. B. Chapin.

Utilization of Natural Energy. By Dr. Louis Bell.

The Suction Gas Producer. By W. H. Booth.

Power House Economies. By W. P. Hancock.

The Electric City of the Future. By S. Morgan Bushnell.

Recent British Locomotive Engineering. By Charles Rous-Marten.

The Menace of Privilege. By R. W. Raymond.

A Question of Good Advertising. By W. D. Forbes.

Reinforced Concrete in Power Station Work. By H. S. Knowlton.

CENTURY.

The most notable content of the April Century is W. J. Bryan's "Individualism vs. Socialism." Mrs. Humphry Ward's serial, "Fenwick's Career" and Frederick T. Hill's "Lincoln the Lawyer" are continued. Contents:

A Sculptor of the Laborer. By Christian Brinton.

Individualism vs. Socialism. By W. J. Bryan.

Public Squares in City and Village. By Sylvester Baxter.

Historic Palaces of Paris. By Camille Gronkowski.

Lincoln the Lawyer. By Frederick T. Hill.

COLLIER'S WEEKLY.

March 24. "Railroad Senators Unmasked," by Henry Beach Needham; "Stockyard Secrets," by Upton Sinclair.

March 31. "What is Yellow," by Norman Hapgood; "Cuba at Boiling Point," by "A Pernicious American"; "The Passing of Susan B. Anthony," by Ida H. Harper; "Up for Trial," by Arthur Train; "Those Private Bills," by John C. Chaney.

April 7. "Real Soldiers of Fortune," by Richard Harding Davis.

April 14. "Under the White Terror," by Albert Edwards; "The Changing Order," by W. J. Ghent.

CHAMBERS'S JOURNAL.

"A Stormy Morning," the serial by Lady Napier, is concluded in the April number of Chambers's Journal. There is the usual supply of first-class fiction and instructive articles in the issue, all equally good.

Nightfall on the Wouvi.

The Queer Side of the Cabinet. By Henry Leach.

Ancient Gems and Precious Stones.

The Estate-Agent.

Why Railways Do Not Pay Better.

Old-Age Pensions. By George McCrae, M.P.

Across the Atlantic in an Open Boat.

The Cost of Living on the Rand.

How an Atlantic Liner Provides for its Clientele.

Mr. Peck-Ridge, M.P. By Henry W. Lucy.

The Duchy of Cornwall and Estates.

More About an Ideal Friendly Society.

CONNOISSEUR.

There are four colored plates in the April Connoisseur: "The Infanta Margarita Teresa," by Velasquez; "Miss Alexander," by Whistler; "Miss Eveleen Tennant," by Millais, and "Oleanders," by Ella du Cane. There are, of course, a great many other interesting illustrations in the number. Contents:

The Marquess of Bristol's Collection at Ickworth. Part I. By Leonard Willoughby.

The Engravings of Andrea Mantegna. Part I. By A. M. Hind.

Some Specimens of Chinese Porcelain. By Mrs. Willoughby Hodgson.

Louis XVI Furniture. By Gaston Gramont.

Robert and Richard Dighton, Portrait Etchers. By D. C. Calthrop.

Stamp Notes. By William S. Lincoln.

The Earliest Known Paintings on Cloth.

CONTEMPORARY REVIEW.

This standard review supplies quite a number of valuable articles in its April number. Its contributors include several noted writers. Contents:

The New Government and its Problems. By J. A. Spender.

Religious Events in France. By Testis.

The Marquis Saionji. By J. Takegoshi.

The New Aristocracy of Mr. Wells. By J. A. Hobson.

Direction for Popular Readers. By Ernest A. Baker.

The Franco-German Frontier. By Demetrius C. Boulger.

Archaeology and Criticism. By W. H. Bennett.

The Truth About the Monasteries. By G. G. Coulton.

The Limitations of Napoleon's Genius. By J. Holland Rose.

The Catholic Threat of Passive Resistance. By P. T. Forsyth.

Dramatic Form and Substance. By Philip Littell.

CORNHILL.

The most entertaining article in the April Cornhill is undoubtedly the sketch of "The New House of Commons" by J. H. Yoxall, M.P., which is written in narrative style, recording the experiences of Mr. Titmouse of Yatton, a young member. Contents:

A New Tale of Two Cities. By Lawrence Gomme, F.S.A.

- A Journey of Surprises.** By Mrs. Archibald Little.
The New House of Commons. By J. H. Yoxall, M.P.
Concerning a Millennium. By A. D. Godley.

COSMOPOLITAN.

The April Cosmopolitan may be aptly termed a number of protest—Wall Street, the U.S. Senate, the new aristocracy of wealth and Senator Platt are all vigorously assailed in four separate articles. But the number is not given over entirely to attacks. We are treated to some excellent fiction, notably stories by W. W. Jacobs, H. G. Wells and Sir Gilbert Parker. Contents:

- Wall Street and the House of Dollars.** By Ernest Crosby.
Idols of the Russian Masses. By Christian Brinton.
The New Aristocracy. By Gertrude Atherton.
The Treason of the Senate. By David Graham Phillips.
The Lesson of Platt. By Alfred Henry Lewis.
What Life Means to Me. By John Burroughs.
Temptations of a Young Journalist. By T. T. Williams.
Story of Paul Jones. By Alfred Henry Lewis.

CRAFTSMAN.

It would be hard to specify the most interesting feature in the April Craftsman. The magazine is a beautiful production typographically, and all its contents are in harmony. The many choice illustrations add greatly to its charm.

- Tendency Toward an American Style of Architecture.** By Russell Sturgis.

- Making of a Modern Stained Glass Window.** By Frederiek S. Lamb.
Adaptation of Public Architecture to American Needs.
John W. Alexander, Artist. By P. T. Farnsworth.
Mural Painting: An Art for the People.
Daniel Chester French's Four Symbolic Groups.
A Great Iniquity. By Leo Tolstoy.

CRITIC.

Portraits of several notable literary people are to be found in the April Critic, as well as several entertaining articles on literary subjects. **Letters of a Poet to a Musician.**

- The Russian Players.** By Homer Saint-Gaudens.
The Prayer-Book of Cardinal Grimani. By Maud Barrows Dutton.
James Matthew Barrie. By E. M. D.
A Concord Note-Book. By F. B. Sanborn.
A Young Goethe. By Elizabeth Luther Cary.

ENGLISH ILLUSTRATED.

Not the least interesting of the articles in the April number is that in which W. Larkins, a famous steeple-jack, chats about his experiences. The article is accompanied by a number of illustrations, which give a good idea of the perilous work of the steeple-jack. There is the usual collection of short stories in the number.

- The Cheap Cottage.** By Spencer Edge.
Kisses. By Beatrice Heron-Maxwell.
'Twixt Heaven and Earth. By J. Loughmore.
Foreign Authors of To-Day. By Cosmopolitan.
Stories of H.M. the King. By Walter Nathan.

"The Weird-Wailing Banshee." By A. W. Jarvis.

EVERYBODY'S.

In the April issue there begins a series of articles on the coal trust by Hartley Davis. At the same time Charles Edward Russell is continuing his researches into social conditions in Europe under the heading of "Soldiers of the Common Good." "The Spoilers," by Rex E. Beach, is continued.

The Coal Trust, the Labor Trust and the People. By Hartlev Davis.

The Gathering of the Churches. By Eugene Wood.

Soldiers of the Common Good. By Charles Edward Russell.

House-Keeping on Half-a-million a Year. By Emily Harrington.

The Fight for the Big Three. By Thomas W. Lawson.

FORTNIGHTLY REVIEW.

In addition to Eden Phillpott's serial in the April Fortnightly, there are thirteen articles of a substantial character in the number. Not the least interesting is Henry James' sketch of Philadelphia.

Morocco and Europe: The Task of Sir E. Grey. By Perseus.

Socialists and Tories. By G. S. Street.

Letters and the Ito. By Israel Zangwill.

Chinese Labor and the Government. By J. Saxon Mills.

A Saint in Fiction. By Mrs. Crawford.

The Continental Camps and the British Fleet.

The Public, the Motorist and the Royal Commission. By Henry Norman, M.P.

Afternoon Calls. By Mrs. John Lane.

Progress or Reaction in the Navy. By Archibald S. Hurd.

A Forecast of the Legion of Frontiersmen. By Roger Pocock.

A French Archbishop. By Constance E. Maud.

The Survival-Value of Religion. By C. W. Saleeby, M.D.

Philadelphia. By Henry James.

FORUM.

The April-June issue of this leading American quarterly review contains the customary surveys of the progress made during the first quarter of the year in the departments of politics, science, finance, music and education. These have been discussed as follows:

American Politics. By Henry Litchfield West.

Foreign Affairs. By A. Maurice Low.

Applied Science. By Henry Harrison Suplee.

Finance. By Alexander D. Noyes.

Music. By Joheph Sohn.

Educational Outlook. By Ossian H. Lang.

Dr. Birkbeck Hill and His Edition of Johnson's "Lives of the Poets." By Prof. W. P. Trent.

An Effort to Suppress Noise. By Mrs. Isaac L. Rice.

Japan's Policy in Korea. By Count Okuma.

GRAND.

The April Grand is full of readable articles and stories. A. E. W. Mason tells which of his stories he considers to be his best and reproduces it so that the reader may judge for himself. Other contents:

Playwriting as a Profession. By Horace W. C. Newte.

Under the X-Rays. No. 15. The

Blight of Red Tape in England.
By T. C. Bridges.

The Journal of the House of Commons.
By John J. Mooney.

Annihilating Distance. By Thomas
Cox Meech.

Both Sides. Do Juries Ensure Justice?

The Natural and the Supernatural.
By Frank Podmore.

The Secret of Success. III. Success in the Army.

Traps for Investors. By G. Sidney
Paternoster.

Why is Home Dull? By Dora Chapman.

Sir Henry Irving. XI. By Joseph
Hatton.

HIBBERT JOURNAL.

(The Hibbert Journal, the English quarterly review of religion, theology and philosophy, is a splendid production typographically, and its contents cover a wide range of interest. In the April number:

Is the Religion of the Spirit a Working Religion for Mankind? By Dom. Cuthbert Butler.

How Japanese Buddhism Appeals to a Christian Theist. By Prof. J. Estlin Carpenter.

Does Christian Belief Require Metaphysics? By Prof. E. S. Drown.

Mr. Birrell's Choice. By Rev. J. W. Diggle.

The Working Faith of the Social Reformer. III. By Prof. Henry Jones, LL.D.

St. Catherine of Siena. By Edmund G. Gardner.

The Laws and Limits of Development in Christian Doctrine. By Rev. W. Jones-Davies.

The Salvation of the Body by Faith. By the author of "Pro Christo et Ecclesia."

The Resurrection: A Layman's Dialogue. By T. W. Rolleston.

Christianity and Science. II. The Divine Element in Christianity. By Sir Oliver Lodge.

IDLER.

Enlarged and otherwise improved, the Idler Magazine for April comes to hand with many entertaining features. A new serial, "Springtime," by H. C. Bailey, begins, and there are stories by Robert Barr and several other clever story writers.

The Wonderland of Ceylon. By Gen. Sir George Wolsley.

The Druce Case. Edited by Kenneth Henderson.

INTERNATIONAL STUDIO.

To the art lover the Studio is full of delights. Especially charming are the fine colored plates that appear in each number. The April issue contains "Autumn," by Alfred East; "Chateau Gaillard," by Alfred East; a study in grey and red by J. Hoppner; "Astwells, Northamptonshire," by T. L. Shoosmith; "Ostrov Kampa," by Vaclav Jansa, and "Folding the Sheep," besides a profusion of photogravures. The literary contents:

On Sketching from Nature. By Alfred East.

The International Society's Sixth Annual Exhibition.

The Rothschild Artizans' Dwellings in Paris.

The Arts and Crafts Exhibition at the Grafton Gallery.

Modern French Pastellists. L. Levy-Dhurmer. By Frances Keyzer.

The Lay Figure: On the National Duty to Art.

Gutzon Borglum, Painter and Sculptor. By Leila Mechlin.

The Elton Memorial Vase. By Geo. E. Bissell.

The Recent Exhibition by Chicago Artists.

Wood Carving at the Metropolitan Museum.

LIPPINCOTT'S.

Lippincott's is mainly a fiction magazine. It can always be recommended for a good collection of stories, and its humorous section, "Walnuts and Wine," is famous in magazinedom. There are seven first-class short stories in the April number and a complete novelette by Samuel Merwin, "The Battle of the Fools," the story of a struggle between a big railroad and a man. Other contents:

Degas: The Artist and His Work.
By Marie van Vorst.

A Window in the Washington Post-Office. By Willard French.

McCLURE'S.

Fiction occupies the major portion of the April McClure's, leaving room for only three or four articles. Of these the character sketch of Count Witte and Dr. Hutchinson's attack on the food-faddists are best worth reading.

Eminiscences of a Long Life. VI.
By Carl Schurz.

Some Diet Delusions. By Woods Hutchinson, A.M., M.D.

Witte: A Great Man Facing Failure.
By Perceval Gibbon.

MUNSEY'S.

Part the first of Herbert N. Casson's history of the steel and iron industry in America begins in the April number. There is a group of eight short stories of the style that makes Munsey's Magazine so readable, while several colored illustrations add to the attractiveness of the number. Contents:

The Romance of Steel and Iron in America. Part I. By Herbert N. Casson.

The Decadence of Positive Authority.
By Charles H. Parkhurst, D.D.

Impressions of Manila. By Atherton Brownell.

People Talked About in Paris. By Vance Thompson.

Some Great Old Plays. III. Rip Van Winkle. By James L. Ford.

The Irish in America. By Herbert N. Casson.

The Art of Courtesy. By Harry Thurston Peck.

The Most Valuable Ten-Acre Lot in the World. By Eugene S. Willard.

NATIONAL.

The April National is a fairly standard issue with no particularly outstanding features.

Affairs at Washington. By Joe Mitchell Chapole.

Joaquin Miller at the Heights. By C. W. Stoddard.

Gotham in Golden Chains. By John Coulter.

The Passing of Jules Verne. By Sarah D. Hobart.

A Day with Marquis Ito. By Youe Noguchi.

Adventures of a Special Correspondent. By Gilson Willets.

NEW ENGLAND.

There is considerable fiction in the April issue of the New England, though of more serious articles there is a good supply. The publishers are featuring John W. Ryckman's investigations into insurance methods, "The Despotism of Combined Millions." They also give space to a lengthy illustrated description of Brockton, Massachusetts.

The Trail of the Mormon. By Clifton Johnson.

- A New England Longing.** By Abram Wyman.
Making Maple Sugar. By Harry A. Packard.
Vermont's Revolutionary Heroine By Helen Vanderheyden.
Handel and "The Messiah." By Herbert O. McCrillis.
Teachers' Conventions Down East. By Mary C. Robinson.
The Despotism of Combined Millions. By John W. Ryckman.

OVERLAND MONTHLY.

- Fiction predominates in the Easter issue of this magazine, though among the other literary contributions there are some very good articles.
Miracles of Santa Ysabel. By Eloise J. Roorbach.
Japanese Mist Pictures. By Charles Lorrimer.
Private Extravagance and the Public Weal. By Austin Lewis.
An Italian Quarter Mosaic. By J. M. Seanland.
Zona Growth of Trees Progressively from North to South. By J. E. Carne.
Markets and Myths of Manxland. By K. E. Thomas.

PALL MALL.

The April Pall Mall is a good all round number. Opening with a series of unusual photographs of scenes in London, the contents embrace a wide variety of subjects. There are several clever short stories, notably a North-West Mounted Police yarn by Lawrence Mott. An interview with Thomas Gibson Bowles, whom Mr. Balfour recently defeated in London, is a feature. Contents:

- A New Aspect of London:** The City through an American Camera.
The New Liberal Government: As seen by an Opposition caricaturist. By G. R. Halkett.

- A Shakespeare Birthday:** a Reminiscence of Charles Dickens. By Harry Furniss.
A Week's Adventure in the East End. By A. C. R.
Studies in Personality: Mr. Thomas Gibson Bowles. By Herbert Vivian.
The Trail of the Pioneer. The Adventures of a Miner in the Gulf Country of Australia. By Alexander Macdonald.

PEARSON'S (AMERICAN).

- The Easter number of Pearson's is largely given over to fiction, in which department there are several good stories, notably an amusing skit by Charles Battell Loomis on "The Fire at Bond's." A scathing article by Rene Bache on "America's Race Suicide" is a notable content.
Who Makes the Spirit of War? By James Creelman.
A Sailor of Fortune. By Albert Bigelow Paine.
The Stories of the Plays. By William Grenvil.
America's Race Suicide. By Rene Bache.

POLITICAL SCIENCE QUARTERLY.

The March issue of this weighty publication is the first number of a new volume. The contents are as usual learned and exhaustive.

- Sovereignty and Government.** By Franklin H. Giddings.
Regulation of Railway Rates. By A. B. Stickney.
Ballot Laws and their Workings. By Philip L. Allen.
The Connecticut Land System. By Nelson P. Mead.
Municipal Home Rule. By Frank J. Goodnow.
The Management of English Towns. By Charles H. Hartshorne.

A Socialist History of France. By Charles A. Beard.

RECREATION.

The April issue of this out-of-door magazine reflects the coming of spring in many alluring illustrations. A multiplicity of short articles, stories and poems, all dealing with life in the open, make its pages particularly entertaining at this time of the year.

Sullivan County Trout. By L. F. Brown.

Salmon Fishing at the Clubs. By Charles Hallock.

Fishing on Cage Lake. By M. T. Frisbie.

Summer on Highland Lake. By John H. Keene.

Queer Bait. By W. M. Hart.

A Canadian Paradise. By C. E. Mills.

ROD AND GUN

The near approach of the holiday season makes Rod and Gun a welcome arrival. The April number is well supplied with readable articles.

Exploring Northern Ontario. By James Dickson, O.L.S.

The Best Old Dog in the Land. By Rev. C. F. Yates.

Duck Shooting on the St. John River, N.B. By T. Q. Dowling.

The Wild Rice Harvest of the Mississaugas. By B. Dale.

Caribou Shooting in British Columbia. By C. G. Cowan.

How I Shot My Moose. By Avery Moorehouse.

Viscount John. By Dr. J. M. Harper.

Camp Fires and Their Environments. By L. F. Brown.

ROYAL.

The cover design of the Royal Magazine can always be counted on to be surprisingly striking. That on

the April number is so striking that it passes description. The contents of the number are bright and varied. In fact the Royal is probably the most entertaining of the lighter English magazines. Contents:

"The Stage" at Home.

A Day as Orderly Officer. By "Khaki."

Our Friend the Donkey. By John Glenfield.

Survivors' Tales of Great Events. XV. The burning of the transport "Sarah Sands." By W. oWod and George Diggins.

Rock and Water Gardens. By George A. Best.

ST. NICHOLAS.

Another volume is completed with the April number of St. Nicholas. The contents of this issue are as usual bright and readable. The life story of Robert Louis Stevenson is prettily told by Ariadne Gilbert, and Charles C. Johnson writes entertainingly of the manual training and physical culture taught in New York public schools. The number is well illustrated, and there are the usual number of stories.

The Lighthouse-Builder's Son. (Robert Louis Stevenson). By Ariadne Gilbert.

The Boys' Life of Abraham Lincoln. By Helen Nicolay.

Training Both Head and Hand. By Charles C. Johnson.

Nature and Science for Young Folks.

SATURDAY REVIEW.

March 10. "Mr. Haldane's Policy," "The Dissolution of the Bloc," "The Navy and the New Crew," "The Tramp," "British Trade and the New Tariffs," "Mr. Hewlett at the Court Theatre," "Plain-Song Again," "Bird Life on the Polders."

March 24. "De Africa Semper," "Military Facts and Fancies," "Protection for British Seamen," "The Liberals and Ritual Legislation," "Hired Furniture," "Pure Beer; a Study in Fallacies," "Irish Folk Music," "Toy Books."

March 31. "The Attorney-General vs. the Labor Party," "The Opportunity of the House of Lords," "The New Phase in Workmen's Compensation," "Sugar Production in Britain," "Sea Lions from Japan."

SCRIBNER'S.

The most noteworthy contribution to the April issue of Scribner's Magazine is the article on the Pan-American Railway by Charles M. Pepper, United States and Pan-American Railway Commissioner, with a series of valuable pictures of the progress of construction. This is the first in a series of articles on "The Railways of the Future." The other contents of the number are up to the high standard set by the publishers.

The Waters of Venice. By Arthur Symons.

The Pan-American Railway. By Charles M. Pepper.

The Caribou and His Kindred. By Ernest Thompson Seton.

Cooper. By W. C. Brownell.

Sir Francis Seymour Haden, P.R.E. By William B. Boulton.

SPECTATOR.

March 10. "Payment of Members," "The Fall of the French Ministry," "The House of Lords and Legislation," "The Clouds on the Horizon," "Children's Meals and Parents' Pockets," "Christianity and Compromise," "The Fortune Tellers," "Out-of-door Games at Country Houses."

March 17. "Mr. Balfour and the Fiscal Debate," "The New French Ministry," "Mr. Haldane and the Army that we Need," "The Chancellor of the Exchequer on Economy," "Mr. Courtney as the Apostle of Risk," "Criticism of the Absent," "The Science of Genealogy," "Nature Study and Modern Verse."

March 31. "The Algceiras Conference," "The Trade Disputes Bill," "The Chinese Commissioners," "The Taxation of Land Values," "The Bible and the Church," "The Social Admonitions of a French Saint," "Morals and the East Wind," "Hibernation in Hedgerow and Wood."

SUCCESS MAGAZINE.

William Jennings Bryan is the leading contributor to the April issue of Success Magazine. He has been specially commissioned by the publishers to investigate conditions in China particularly as they relate to America. Another excellent article in this issue is Frank Fayant's "Story of Steel," in which he traces the marvelous development of the steel industry in America. Contents:

The Chinese Question. By William Jennings Bryan.

The Story of Steel. By Frank Fayant.

The Habit of Governing Badly.—Newark. By Samuel Merwin.

Heinrich Conried—Opera Builder. By J. Herbert Welch.

Am I to be Oslerized? By Orison Swett Marden.

Fighting the Telephone Trust. III. By Paul Latzke

Applying for a Position. By Henry C. Walker.

TECHNICAL WORLD.

A more entertaining magazine it would be hard to find than the Tech-

nical World. The April number is not only rich in readable articles, but it is brimful of illustrations as well. Some may imagine from the title that the Technical World is abstruse, but such is not the case. The contents are within the grasp of every reader.

Billion-Dollar Steel Trust Makes Microbes Pay Dividends. By Henry M. Hyde.

Niagara Falls Already Ruined. By Alton D. Adams.

When Life or Death Hangs on a Blood-Stain. By W. F. Watson.

Skee-Runners in the High Alps. By Fritz Morris.

Alice and the Alternating Current. By George C. Hawkins.

Blessed—then Cursed—by Water. By Edgar F. Howe.

Gun-Cotton Used as Fuel. By William R. Stewart.

Quarrelsome Cannibal of the Ocean. By Henry Morrow.

Trolley Line Hanging in Air. By Dr. Alfred Gradenwitz.

Vast Forest of Crystal Trees. By Guy E. Mitchell.

Seen at the Automobile Shows. By David Beecroft.

Life-Stories of Successful Men. E. B. Eddy. By Albert R. Carman.

WATSON'S.

The April number of Watson's is a regulation issue, containing six editorials by Thomas E. Watson, a number of stories and several articles on populist subjects.

Machine Rule and its Termination. By George H. Shibley.

Control or Ownership. By Charles Q. de France.

Our Civilization. By Count Tolstoy.
A Coal Miner's Story. By Charles S. Moody.

Those that are Joined Together. By Charles Fort.

The Russian Apostle of Populism.
By Thomas C. Hutton.

WINDSOR.

The artist whose work is elaborately illustrated in the April Windsor is J. C. Dollman. Fourteen of his best pictures are reproduced, many of them in full-page size. A profusely illustrated article on the great north land of Canada and its inhabitants, written by Ernest E. Williams, appears under the title "Via Hudson Bay." Contents:

The Art of Mr. J. C. Dollman, A.R.W.S. By S. L. Bensusan.

Chronicles in Cartoon. V. Bench and Bar. By Fletcher Robinson.

Via Hudson Bay. By Ernest E. Williams.

WOMAN'S HOME COMPANION.

A great deal of entertaining matter is crowded into the Woman's Home Companion every month. The stories, of which there are always a good supply, are cleverly selected and the hints for the home are always novel and bright. Of articles of a more serious nature in the April issue we find:

The Havoc of the Avalanche. By George W. Fitz.

The Strangest of Christian Pilgrimages. By Rev. John B. Devins.

The Four Greatest Living Americans at Work.

WORLD TO-DAY.

A set of photographs, "In Maple Sugar Time," is an interesting feature in the April issue, which is as usual a comprehensive number. Excellent likenesses of Andrew Carnegie, Grover Cleveland and Joseph G. Cannon appear, and the range of

other illustrations is sufficiently numerous to provide a picture for almost every page. Contents:

The Siren's Island. By Edith H. Andrews.

Judge Lindsey and His Work. By Helen Grey.

Facts and Problems of Adolescence. By James Rowland Angell.

The American Manufacturer in China. By Arthur D. Coulter.

The Birth of an Automobile. By Sigmund Krausz.

Consular Reform. By C. Arthur Williams.

Silhouettes from Life. By H. G. Dwight.

The Palette and Chisel Club. By Thomas Bruce Thompson.

Why Arizona Opposes Union with New Mexico. By Dwight B. Heard.

How Immigration is Stimulated. By Frederic Austin Ogg.

A Royal Artist. By Louis G. Northland.

The Theater in France To-day. By Cora Roche Howland.

WORLD'S WORK (AMERICAN).

April World's Work is introduced to the public as a policyholder's manual, deriving the title from its exhaustive study of insurance and the insurance problem. No fewer than thirteen articles on every phase of the question are in the list of contents, while other articles, of which there are at least three important ones, are relegated to a secondary place. Contents:

The Bank Depositor and His Money.
A Personal Guide to Life Insurance.
The Insurance Revolution.

Changes in the "Big Three" Companies.

Life Insurance as a Profession. By Leroy Scott.

The Meaning of Insurance Words.

The Cheapest Insurance.

The Kind of Policy to Buy.

The Deception of "Prize" Policies.
Surrendering and Exchanging Bad Policies.

Personal Experiences of Policyholders
Rich Men's Insurance.

How the States Supervise Insurance.

What Companies to Insure in.

The Socialist Party. By Upton Sinclair.

Twenty-Five Years of Tuskegee. By Booker T. Washington.

Great Riches. By Charles W. Eliot.

WORLD'S WORK (ENGLISH).

A splendid full-page portrait of Sir William Van Horne forms the frontispiece of the April number of the World's Work. It accompanies an article in which Sir William is interviewed on Canadian affairs. The number contains many other excellent features, notably a description of the new Cunard steamships. In all there are to be found seventy illustrations in the pages of the World's Work. Contents:

Marines as Chauffeurs. By Fred T. Jane.

Across the Atlantic in Five Days. By F. A. A. Talbot.

How a Small Farmer Succeeded. By "Home Counties."

Canada, America and British Trade.
 Interview with Van Horne.

The March of Events. By Henry Norman.

A Private Menagerie. By W. M. Webb.

The Marvels of Photography. By H. W. Lanier.

Motors and Men. By the Editor.

The New Spirit in London Locomotion.

The Automatic Rifle. By H. G. Archer.

The Queen of Flowers. By S. L. Bastin.

The Busy Man's Book Shelf

Some Interesting Books of the Month Reviewed



Judith. By Grace Alexander. Indianapolis: The Bobbs-Merrill Co. Cloth, \$1.50.

The love story of a young and beautiful maiden of Camden, on the Ohio, and a Methodist preacher from New England. The tragic element centres round Judith's betrothal to a playmate of her childhood's days, which causes agony to her and a puritan's remorse to her parson-lover. Several passages in the story are told with uncommon strength. As would naturally be inferred, the ending is made conventional by the death of the third character.

Saints in Society. By Margaret Bailie-Saunders. Toronto: The Copp Clark Co., Limited. Cloth, \$1.25.

Mark Hadino, the hero of this book, is a strong portrayal of a man risen from the ranks to high social position. As a labor leader he starts out with high aims, but his over-mastering ambition and self-sufficiency ultimately prove his ruin. Even more interesting as a character study is his young wife, Clo Hading. Less gifted, but with purer motives, she attains to a higher degree of excellence, and remains uncontaminated by the follies of the fashionable world in which her husband's success has placed her.

The Long Arm. By Samuel M. Gardenhire. Toronto: The Poole Publishing Co. Cloth, \$1.25.

An American Sherlock Holmes, by name Le Droit Conners, occupies the centre of the stage in this volume of short stories. He is very much like Sherlock, possibly a trifle more rapid in his deductions, and his exploits are chronicled by a friend who parallels Dr. Watson. The stories are all absorbing, some like the first, "A Brother of the Heart," rather extravagant, and others like "The Adventure of the Counterfeiters," quite realistic. There are eight stories in all.

The Wheel of Life. By Ellen Glasgow. Toronto: The Musson Book Co. Cloth, \$1.50.

An intense and thrilling story. In Laura Wilde the author has laid bare with wonderful insight the workings of a beautiful human soul in its struggles upward towards light and freedom through the entanglements of the emotions and the poetic temperament. She finds both at last in self-renunciation and conformity to the Divine Will. The other characters are well sustained and interesting in the parts

they play, but the absorbing interest of the book centres in the heroine.

The Scarlet Pimpernel. By Baroness Orczy. Toronto: William Briggs. Cloth, \$1.25.

Taking as their badge the little flower of the scarlet pimpernel, a band of young Englishmen set themselves the task of saving the lives of French aristocrats doomed to the guillotine in the days of the Revolution. The utmost secrecy is preserved and the identity of the daring leader carefully concealed. Not until the book is more than half read does the hero emerge from the group of characters, which the author has created. The romance is intensely exciting from first to last.

The Eternal Spring. By Neith Boyce. New York: Fox, Duffield & Co. Cloth, \$1.50.

Showing love, the eternal spring of happiness, as exemplified in the lives of two young Americans who meet in Italy. Carleton goes to Italy a nervous wreck, thinking he is in love with a former friend, but meeting her after a lapse of several years he finds it is not really love he feels for her, but merely friendship. He transfers his affections to her cousin, a young musician, who fancies she has inherited insanity and should never marry. However, all comes right in the end, when they find eternal spring. A very interesting and enjoyable little love story.

The Portreeve. By Eden Phillpotts. Toronto: The MacMillan Co., of Canada. \$1.50.

A story of unusual power. The scene is laid in Devonshire. Mr. Phillpotts has caught the spirit of the moor and infused it into the men and women who live in this his latest book. The sombre, passionate earnestness of Dodd Wolferstan, the Portreeve—the kindly humor of Dicky Barkell, the gentle cynic and free-

thinker—and the cruel vindictiveness of Primrose Horn, are realistic human expressions of the wide moorland country vivid in portraiture and true to nature.

BOOKS ON BUSINESS.

Monopolies, Trusts and Kartells. By Francis W. Hirst. Books on Business.—London: Methuen & Co., 36 Essex street, W. C. Cloth, 2s. 6d net.

Mr. Hirst's treatment of his subject is explanatory rather than controversial. True, he makes it early apparent that he is a believer in the old view that competition is the life-blood of trade and commerce. But he does not force his opinions to the forefront.

The book is divided into two parts (1) monopolies in general and (2) trusts, kartells and other modern combinations. In his first division, Mr. Hirst reviews his subject historically and then proceeds to take up existent fiscal and public monopolies such as the tobacco monopoly in Austria, the Japanese state monopolies in opium, salt and camphor in Formosa, the alcohol monopoly in Switzerland and the coinage monopoly in every civilized country. An entire chapter is given over to a consideration of monopolies of transport, including a discussion of the relative merits of state ownership and state regulation of transportation systems.

The second division of the book embraces three separate manifestations of industrial monopoly, the kartell of Germany and Austria, the trust of America and the combination of England. Mr. Hirst points out the origin of these monopolies, showing how they are the direct fruit of protective tariffs and the elasticity of the English law and indicating the differences among them. He has a good deal to say about dumping, which should prove interesting to Canadian readers. Altogether Mr. Hirst's little book is an illuminating treatment of a subject which is

bound to bulk largely among public questions in the near future.

The Art of Wall Street Investing. By John R. Moody. The Moody Corporation, 35 Nassau street, New York. Cloth, \$1.00 net. By mail, \$1.10.

This is a practical handbook for investors and others, which treats the subject of Wall street investing in a simple and sensible manner. It is an attractive volume and is particularly useful and valuable because of the clear and entertaining way in which the various methods and phases of Wall street investing are explained and pointed out.

The book is made up of ten chapters, covering such subjects as bonds and what they represent; stocks and what they are; rules for analyzing railroad securities; explanation of syndicates and reorganizations; the difference between investment and speculation; methods for ascertaining security and safety; and a vivid description of the New York Stock Exchange and its works.

In addition, a chapter is given to Wall street terms and phrases, explaining briefly and clearly all the important Wall street words and methods. While many books have been written on the general subject of Wall street and special descriptions have been given of certain phases, yet this is the first modern attempt to cover the subject in an attractive and popular form. The book should certainly have an enormous sale, as it is of great and permanent value.

The Commercial Gazetteer of the World. By William Melven, M.A. Toronto: Morang & Co., Limited. Cloth.

To supply in concise and easily accessible form the main features of the commercial life of the countries, provinces, cities and towns of the world, is the object of this book. That the compiler has succeeded in his task is abundantly evident from even a cursory examination of the volume. Take at random any city that comes to mind and on looking up the name in the list, which is, of course, prepared in alphabetical order, full particulars as to the location of the place, means of access to it, its population, its industries, its trade, etc., are given. The same applies to countries, districts and provinces, while to the seeker after information about rivers, lakes, seas, islands and other geographical features, the book answers all the elementary questions.

Being a commercial handbook, the compiler has refrained from historical or literary allusions, contenting himself with supplying only such data as will be of service to the business man.

In addition to the reading matter the book contains a number of maps on which are exhibited the various parts of the world from which certain products are derived. By means of them one can gather at a glance just where certain commodities are obtainable. The book should find a place on every business man's bookshelf.

The Canadian Military Gazette



This old established paper has recently changed hands. The new proprietors include prominent military officers in all parts of the Dominion.

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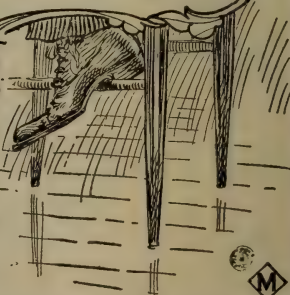


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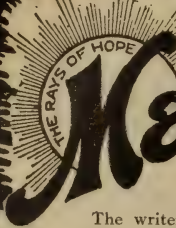
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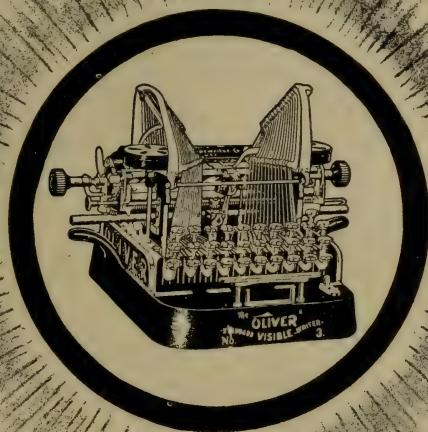
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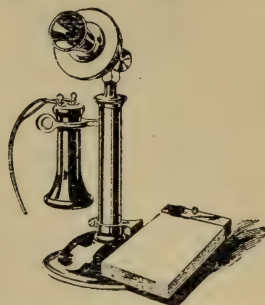
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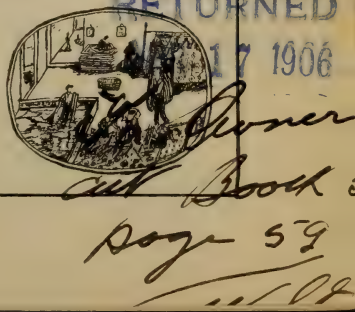
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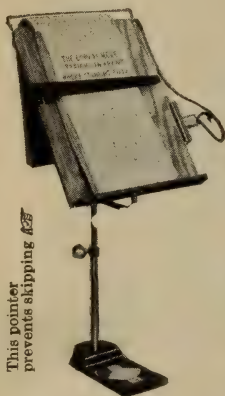
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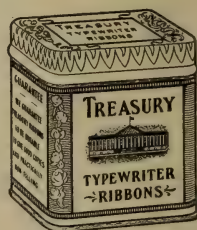
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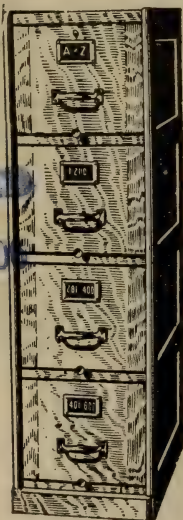


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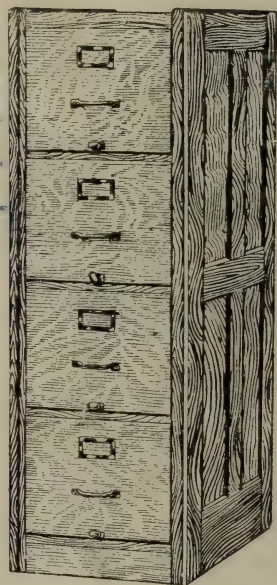
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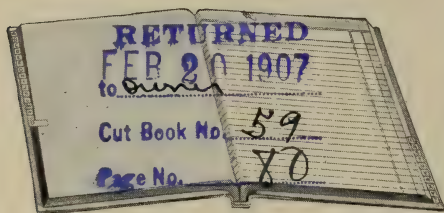
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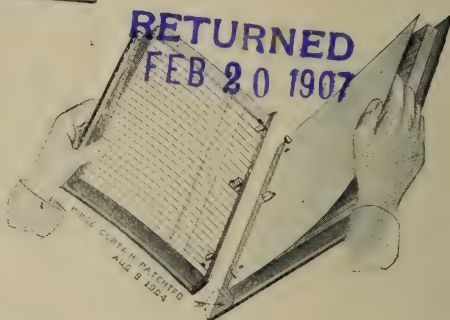
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THE BUSY MAN'S MAGAZINE

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Inside With the Publishers

OCCASIONALLY we receive letters from our readers directing our attention to such and such articles and requesting that we republish them in The Busy Man's Magazine. It is a pleasure to us to receive these letters and as often as possible we comply with the requests contained in them. We would like to hear oftener from our readers along this line. We are not infallible and sometimes meritorious articles are passed over by us inadvertently. As we want to live up to our reputation of giving our readers the very best of what is published, we would count it a favor to have our attention drawn to any valuable articles that we omit.

* * *

Just as every publication contains both excellent and poor articles, so even the best of articles has its mediocre parts. In The Busy Man's Magazine we make it a point to select not only the best article in a magazine but the best part of the article, for reproduction. By so doing we do not withdraw any lustre from the magazine from which we make our extract. Rather do we increase our readers' interest in it.

* * *

A correspondent desires to know why we do not publish the addresses of the various magazines the contents of which we list. He was anxious last month to secure a copy of one of the periodicals referred to but did not know where to write for it. It would of course be quite easy for us to supply this information, but we do not feel inclined to give up space

for this purpose. Newsdealers should know how to secure copies of any of the magazines referred to and we would advise such of our readers as desire copies of magazines to make their purchases through them.

* * *

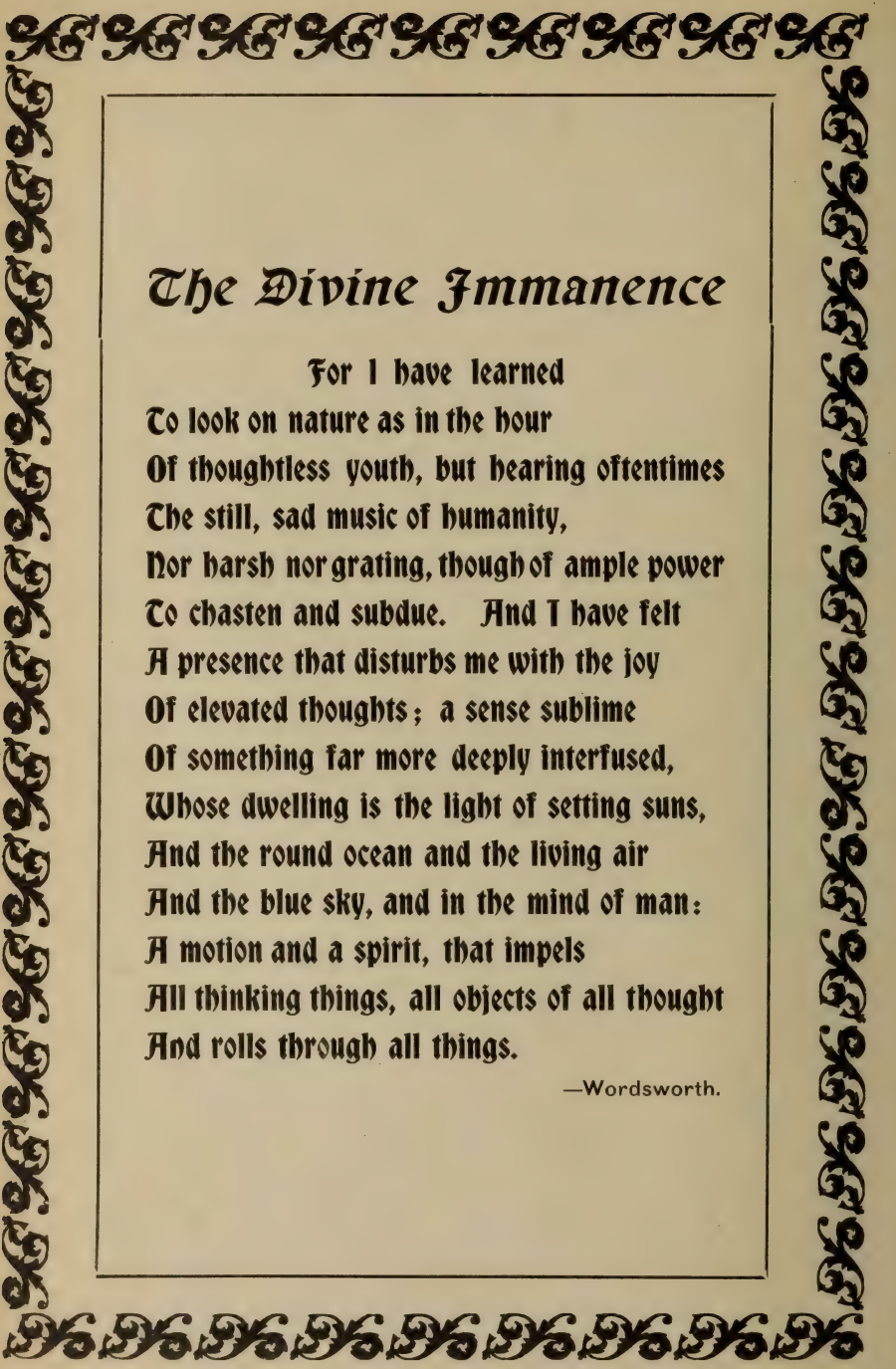
The current number of the magazine appears with a new cover design and is printed on better paper. Both these features we trust will meet with the approval of our readers. We would be glad to have suggestions from those interested as to how to improve the magazine. Our desire is to please our readers as much as lies in our power.

* * *

The Canadian end of the magazine is receiving careful attention from the editors and it is hoped that the extent and scope of the Canadian contributions will be considerably enlarged. The character sketches of successful Canadian men of affairs will, of course, be the leading feature but other interests will also be attended to.

* * *

Our character sketch this month deals with a Canadian, whom his countrymen know only slightly, but who has made a name for himself in Chicago. A native of Lincoln county, Mr. Rittenhouse has remembered his home township of Clinton by gifts of schools and other public buildings, which will perpetuate his memory among a grateful people. The sketch has been prepared by the associate editor of Toronto Saturday Night, a clever young Canadian journalist, who has already made a name for himself in Canadian literature.



The Divine Immanence

For I have learned
To look on nature as in the hour
Of thoughtless youth, but hearing oftentimes
The still, sad music of humanity,
Nor harsh nor grating, though of ample power
To chasten and subdue. And I have felt
A presence that disturbs me with the joy
Of elevated thoughts; a sense sublime
Of something far more deeply interfused,
Whose dwelling is the light of setting suns,
And the round ocean and the living air
And the blue sky, and in the mind of man:
A motion and a spirit, that impels
All thinking things, all objects of all thought
And rolls through all things.

—Wordsworth.

THE BUSY MAN'S MAGAZINE

Vol. XII.

JUNE, 1906.

No. 2

Moses Franklin Rittenhouse

Successful Business Man and Exponent of Good Citizenship.

BY H. W. JAKEWAY.

In the career of the Lincoln County boy, who has made a great success in the lumber business in Chicago and the Western States, young Canada will find an inspiration. It is not so much that he has gained fame as a business man but that he has won the esteem and devotion of many people by his generous hearted and wise philanthropy.

THE young Canadian looking out over the world just as he starts upon his career in this day of individual prosperity and national expansion, is naturally inclined to feel that nothing can prevent him from attaining Success. He does not stop to consider just what success is. He is sure that it will be his, and that is enough. Yet, though he may be ever so ready, day and night, to open his door when Opportunity pauses to knock, and though he may pile up dollars to his heart's content and live luxuriously to his stomach's discontent, though he comes to be pointed at as one of the successful men of the land, if he neglects one thing in life there will certainly come a day when he will realize that success is not his. This one thing without which there can be no true success, is generosity. A great man of old—the finest poet of Scriptural times—called it charity, the preacher calls it brotherly love, the sportsman calls it goodfellowship. Call it what you will, we all recognize and admire it. So our young Canadian

would do well to think out the essentials of success right at the outset of his business or professional life, rather than to rush on impetuously, only to discover when it is probably too late, that he has pursued a mistaken course. He will do well to cultivate the qualities of that dear old friend of our youth, "Joe Gargery," of "David Harum," and of the men of flesh and blood here and there who, though they are busy right now encountering the problems of modern business, still retain the great, simple, lovable characteristics of those fine old fellows of fiction. Such a man is Moses Franklin Rittenhouse, the eminent lumberman, whose name is a household word in Lincoln County, Ontario. Down there, when they wish to praise a man's business ability, they don't say that he is as good as the wheat, but that he is as solid as Rittenhouse; or if some resident displays unwonted generosity, they say he is becoming a regular Rittenhouse.

The career of Mr. M. F. Rittenhouse has indeed been truly remark-

able—one that can well be held up as an inspiration to young Canadians. He has solved the problem of living a truly successful life, and he has done it by being throughout a gentle, generous, busy man.

Mr. Rittenhouse was born in Clinton township, in the County of Lincoln, Ontario, on August 12, 1846. His birthplace was a humble home on a farm lying twelve miles from the city of St. Catharines. Those were pioneer days, when the pupils in the public schools of the province, instead of being mere precocious children, as at present, were, in the higher classes, full-grown young men and women. In the summer the big boys and many of the girls worked hard every day on the homestead, and picked up what education they could between the seasons of late fall harvesting and early spring plowing. Up to the age of eighteen young Rittenhouse, like the other boys of the neighborhood, labored steadily on the farm all summer and devoted himself to the study of "readin', writin, and arithmetic" at the district school during the winter. Then he was seized with the inclination to "strike out" into the world. Going to Chicago, which was at that time just acquiring some importance as a lumbering centre, he secured employment in a planing mill at \$3.50 a week. A little later he had his wages advanced to \$4.50 a week, but he was not satisfied with this degree of remuneration and left the mill to become a "printer's devil" in the office of the Chicago Morning Post.

It would be extremely interesting to have a record of all the men of importance in America who have at one time or another worked in a newspaper office. Most of them, however, have found that not wealth, not even

fame, lies often that way, but that the consciousness of work well done is the chief reward of the men of the press. The lad from Lincoln soon made the discovery that progress in a newspaper office was slow, and came to the conclusion that the wisest thing for him to do would be to get back quickly to the lumber business. He washed the printer's ink from his hands, threw down the roller and the benzine can, and became a tally boy for a firm of lumber inspectors on the Chicago cargo market. His work during that summer was such that he realized the need of further grounding in the studies which he had pursued at home. When navigation closed, therefore, he returned and attended the old school in Clinton township, applying himself faithfully to his books all winter. With the coming of spring he again went to Chicago and entered the employ of another lumber company.

Courteous, painstaking, clear-headed, and thoroughly reliable, the young man made steady progress. Presently he was entrusted with the management of a branch yard. He never lost sight of the fact, however, that a trained mind is necessary in order to qualify for any executive position, and he constantly cherished the ambition to climb high. He had the courage to resign his position in order to spend some time in gaining further educational equipment. He attended a business college, worked hard, and later on became a book-keeper. Having risen from the factory to the office, he set himself resolutely to the task of climbing over the railing into the executive rooms. Going from one company to another and advancing with every change to a higher and more responsible position, he finally became general manager of

the J. Beidler & Bro. Lumber Co. Upon its incorporation, some time after, he became treasurer of the company, a position which he filled until in April, 1883, he formed a partnership with Mr. Jesse R. Embree and opened an office and yard in Chicago, the new firm being styled Rittenhouse & Embree.

From the first the new business was highly successful. During its initial year of existence the firm handled 7,000,000 feet of lumber and with each successive year until 1903 a substantial increase was shown in its transactions. In that year it handled 52,000,000 feet of lumber and in the years that have followed it has approximated that amount. In 1892 the Rittenhouse & Embree Co. was incorporated with a capital of \$100,000, with Mr. Rittenhouse as president. Its growth since then has marked it as one of the most successful in Chicago. Mr. Rittenhouse is now largely interested in a number of other lumber companies throughout the west, besides being a director of several insurance companies, banks and other financial institutions.

It is not merely his material prosperity, however, that marks Mr. Rittenhouse as a successful man, a model citizen whose career may well be selected to serve as an inspiration to young men who are entering business life. His record is chiefly admirable because during all the years of driving, strenuous effort in which he climbed to a high place on the commercial ladder, he continued to cultivate those characteristics of simplicity, candor and largeness of heart which are too often thrown aside by men of business as large affairs press heavily upon them. Indeed, during his entire career Mr. Rittenhouse has

been happiest when making life more comfortable and happy for others.

He is one of those men who simply delight in seeing people having a good time and getting pleasure and profit from living. For example, it has been his custom for years to gather together a large party of his relatives, most of whom live in Lincoln county, and take them off on a pleasure trip. These parties number anywhere from thirty or forty upwards. He has taken them to a number of interesting places in Canada and the United States, including New York, Albany, Philadelphia, Washington, Atlantic City, Brantford, and other points. When the King Edward Hotel in Toronto was opened Mr. Rittenhouse assembled a hundred or more of his connections, brought them down and entertained them royally at the palatial new hostelry. When on these trips the "International Ramblers," as Mr. Rittenhouse calls them, enjoyed the best of everything, and the only way in which any of them could find a way of spending a dollar of his own was by strategy to evade the keen eye of that gentleman.

Mr. Rittenhouse's acts of beneficence in the neighborhood of his birthplace, which he finds great pleasure in visiting when he can, go to make up about as pretty a story of human kindness and good citizenship as one would wish to hear. One of the first things which he did for his native place was to establish the Rittenhouse public library there twenty years ago, and several times since he has made additions to it. The Rittenhouse public school, its beautiful grounds, and the adjoining buildings erected through his generosity, are the chief pride of the locality. The schoolhouse which Mr. Rittenhouse attended as a lad was an old stone

building just like many another in which now prosperous business men received their first scraps of learning. Mr. Rittenhouse, after he had gone far afield and become engrossed in large affairs, did not forget its unsanitary, comfortless condition, and when on a visit to his old home in 1890 he conceived the idea of building a new schoolhouse—a model of its kind—in which the young people of the section should have all the benefits of proper sanitation, heating, etc., which modern construction and the most approved equipment could supply. The old stone building was falling into decay, and when he laid his plans before the school trustees of the section they gladly accepted his proposal to share the cost of a new building. So it came about that union school section No. 1, Township of Clinton, and No. 2, Township of Louth, was that very year furnished with a schoolhouse which was, and which still is, the finest and best equipped rural school in Canada.

The Rittenhouse public school is beautifully located near Jordan Station on the Grand Trunk Railway. It is a handsome brick building and stands about half a mile from the site of the old school and a short distance from the shore of Lake Ontario. One wing contains the Rittenhouse public library which was moved there on the completion of the building and which now contains over two thousand well-selected volumes, including such valuable works of reference as the *Encyclopaedia Britannica*. Most of the leading English and American magazines are also received there, and the library is accessible to the people of the district at all times. In another wing is a museum in which there is a collection of the insects, birds, minerals, and

plants of the district. The school proper is equipped with the best and most up-to-date desks and seats obtainable. The floor is covered with linoleum and the walls are hung with attractive pictures. Everything is in excellent taste. The grounds, which were laid out artistically by Mr. Norman Vair, the landscape gardener employed by the Ontario Education Department at the Normal School, Toronto, give the place a very fine appearance. There is in the basement of the building a winter playroom for the smaller children, and fine playgrounds, a toboggan slide and an open air skating rink are also provided. The patron of the institution has lately decided to lay out a large plot of ground for the purpose of allowing the pupils opportunities for carrying on school gardening.

Two years ago Mr. Rittenhouse purchased two acres of land directly across the road from the school and there erected a public music and lecture hall. It has a seating capacity of six hundred, and is equipped with opera chairs, a large stage, a piano, an acetylene gas plant, etc. Here entertainments are held both by the school and by the people of the district, and the donor provides an annual grant for the purpose of providing good entertainers and guaranteeing the usefulness of the place, which he has named *Victoria Hall*. In connection with the hall there is a conservatory where pupils of the school may pursue nature study of plants and flowers. There is also a comfortable two-storey residence for the caretaker of the group of buildings, all of which are supplied with water by a gasoline pumping station at the lake shore.

The hall and its furnishings cost over \$16,000.

This summer it is the intention of Mr. Rittenhouse to boulevard the road and widen it as far as the railroad. He also purposes to lay a concrete sidewalk the same distance, and use his influence to have a railway station built at that point.

His latest project is to co-operate with the Ontario Department of Agriculture in establishing an experimental fruit farm on property adjoining the school and hall. He has offered to provide the necessary land, and will lend his aid energetically in the matter. The great success of the Agricultural College and Experimental Farm at Guelph and of all the other experimental stations under governmental direction leads the department to believe that a Government fruit farm at this point, which is in the heart of the Niagara district, one of the richest fruit-growing districts in the world, would be of immense value to the province. The place has been examined by officials of the Agricultural Department, and it has been practically decided to accept Mr. Rittenhouse's generous offer.

It is Mr. Rittenhouse's idea that by having the school, the hall, the farm, and possibly other public buildings, in a group, that their value will be enhanced, and it is plain to be seen that the cost of their maintenance will be much lower than it would if they were not in close proximity to one another. The school has long been the marvel of all visitors to the locality who have been accustomed to thinking of schoolhouses, and especially rural schoolhouses as plain, undecorated places which it is out of the question to keep really comfortable, much less to make beau-

tiful. The average rural school trustee, who had never seen it, would probably not believe in the practical existence of such a place. The addition of the hall and the promised establishment of the experimental fruit farm, together with the other improvements contemplated in the neighborhood, are attracting much attention to the Rittenhouse buildings and to the benefactor himself.

This resourceful business man has "barrels of ideas" and he believes in giving his friends and the public the benefit of them. In hundreds of ways outside of the gracious acts which have here been outlined, he has planned, and continues to plan, projects for making things better and brighter for those who come within his reach. Yet this earnest, active exponent of good citizenship is one of the most modest of men. He has never been known to court publicity; on the contrary he takes pains to avoid it. In much that he does in the way of benevolent action he plans to make his assistance take the form of advisory, as much as financial aid, for the reason that he dislikes anything which might be construed as horn-blowing.

It is not surprising, then, under the circumstances, that when Mr. Rittenhouse visits the scenes of his youth his coming is made a gala occasion. There are picnics and dinners and other outings in which every one is glad to join, for everyone genuinely admires the big-hearted Lincoln old boy who has done so much for his native place, who has taken such a keen interest in seeing that the young folk there are provided with advantages unknown in his early days.

Mr. Rittenhouse has three sons, one of whom is a medical missionary

in Burmah, having gone there with his wife last year. It is a rather remarkable thing that in former years the benevolent lumberman had not been in favor of giving largely to foreign missions, thinking, like many others, that charity should begin at home. Speaking on this subject the other day to a friend, he said: "At one time I used to say that I would not contribute to foreign missions, but I had to give—I had to give a son, and no doubt it is a good thing for me to learn this lesson."

Quite as popular among his business associates as among his old friends in Ontario, Mr. Rittenhouse has achieved a position which is enviable indeed. One of the men who has been connected with him in matters of business for years, writes as follows:

"From what I know of Mr. Rittenhouse's life and accomplishments an estimate of his character may be summed up in a few words. He is possessed of an analytical and studious mind and is conservative in his attitude toward anything tending to a deviation from accepted customs, though progressive and almost an enthusiast when he has arrived at a decision after thorough investigation of the subject in hand, such as he invariably makes. Apparently reticent and reserved in his manner, it is because of a commendable modesty which restrains him from making himself conspicuous. He is most considerate of the welfare and comfort of those who are about him; is courteous and generous in his treatment of his employees in all his en-

terprises and enjoys their esteem to an unusual degree. His habits are simple almost to austerity, though not from any desire to obviate expense, but rather from a disposition to conserve his health. His charitable instincts are largely developed and every act of his life, whether in a business or a social relation, is prompted and controlled by the principle laid down in the Golden Rule. Possessing the art of right living, he has preserved his health to a degree seldom enjoyed by a man of three score years. In the spring of 1905, while horseback riding, he was thrown from his horse, sustaining injuries which at the time were believed to be irreparable, if not necessarily fatal. His lifetime of regular habits came to the aid of his nature, however, and though confined to his bed for several months, he has since recovered a practically normal condition of health, to the great gratification of his hundreds of friends."

In short, Mr. Rittenhouse has demonstrated in his lifetime the undoubted truth of two things, that every young man should realize. No man requires "pull" to succeed in business, or in anything else. As old "Gorgon Graham" says, you can't hold a poor man up and you can't keep a good man down. The other and more important thing to remember is that the sort of success, no matter how large it may be, that makes a man merely a wolf seeking his own, is not success at all, but merely dead sea fruit.

What Did Dugan Do to 'Em?

BY ELLIS PARKER BUTLER IN SUCCESS MAGAZINE.

Dugan possessed a vivid imagination and, like J. M. Barrie's hero who was convinced he had all the diseases in the dictionary except "house maid's knee," believed he had all the ailments in the category of sickness. The way he was cured of his ailments is amusingly told by the clever author of "Pigs is Pigs."

M^R. DUGAN came into the kitchen with a hunted look on his freckled face. For the first time in years he went right up to Mary and kissed her. She knew at once that something was wrong.

"Mike," she said, "phwat is ut?"

"Nawthin'," he said, drearly; "nawthin' only Oi'm as good as dead. Oi knowed it all along, only Oi niver thought av ut. Oi've got viulent dyspepsy complicated wid sorosis ov th' liver, an' malarial consumption, an', mebbly, cancer ov th' lung, but Oi dunno for sure till Oi read over Case 64 ag'in. Annyhow, thim sorosises ov th' liver is plenty t' kill me. Thim is very dangerous diseases, thim sorosis things. Thim"—and he drew a soiled pamphlet from a hip pocket—"thim is set out in Case 26. 'T was Rivirind A. M. C., ov Tuskyloosa, Georgia, had th' Case 26. Thim germ bugs done ut. 'T is thim germ bugs does all th' damages."

Mrs. Dugan looked at him aghast.

"'T is not thim ye've got!" she exclaimed, with horror; "'t is all up wid ye, then, Mike, poor felly! 'T was thim same germ bugs Missus Murphy was tellin' me av that she heard av at th' free lecture th' gintleman gave what was sellin' 'King av Pain,' on th' corner in front av Clancy's grocery, fer wan dollar a bottle an' a solid goold fountain pen free wid iv'ry bottle. Sure, Oi know thim germ bugs! 'T is th' same Missus Murphy says ye shud niver ate widout cookin' thim firrust! Hev ye been takin' thim raw, Mike?"

"Oi dunno," he said, despondently. "Oi dunno whin Oi tuck thim, at all. Mebbly 't was at Grogan's. Sure, 't was at Grogan's! Oi recall t' mind Oi says t' him, last Toosday—"Grogan,' I says, 'phwat meks th' beer taste so owdashus?' 'Sure, Oi dunno,' he says, an' he teks th' glass Oi was drinkin' av an' smells ut, an' emptys ut out. 'Hev another glass, Dugan,' he says; ' 't is on th' house.' 'T was th' germs he smelled in th' beer, that's phwat!"

"An' him an' alderman!" exclaimed Mrs. Dugan, "an' you sich a steddly customer t' him!"

"He did n't know ut," said Dugan, in an apologetic tone, "when he set ut out. He did not smell of th' beer. But, annyhow, Oi've got thim."

Mrs. Dugan merely stood and wrung her hands.

"An' 't was funny," said Dugan, "that Oi didn't know Oi hed thim germ bugs till all ov a suddint. 'T meks me blood freeze t' think Oi might av lived all me loife an' niver knowed ut, an' me dyin' av sorosis av th' liver, iv'ry minute. Thim germ bugs is insidjoos things, Mary."

He shook his head at the insidiousness of them.

"Ye may be full av thim," he said, "so full av thim they be crowded fer room an' sleepin' four in a bed, be-like, an' ye don't know ut. There be but wan way t' know ut—by th' symptoms!"

"Mike," cried his wife, "an' hev ye got thim, too?"

"Thim phwat?" he asked.

"Symptoms," she said. He frowned.

"Thim is no disease, Mary," he explained. "Thim is th' feelin's av you. There be forty-sivin koinds av feelin's ye kin hev, an' accordin' as th' feelin's is bunched 't is th' disease ye hev. Oi hev," he said, impressively, as he opened the pamphlet, "forty-six av thim."

"Blissed Saint Patherick!" cried Mrs. Dugan.

"Here's this felly, Judge G. P. Cornville, Idyho, thet hed viulent dyspepsy av' th' stomach," said Mike reading from the booklet with difficulty. "He's afther writin' t' th' doctor so: 'Dear Sur,—Me woife an' neighbors all give me up fer a corpus, Oi wuz so near dead. Me stomach wuz morbid, an' me liver hed ceased from palpitatin'. Th' coroner kem in an' sat on me stomach an' me liver an' says Oi was a real dead wan. Me woife sint fer th' undertaker an' he kem to enbalm me mortal remnants, but by a good bit av bad luck he mistook th' bottle av "King of Pain" me woife was takin' fer her nooralgy to be his stuff an' introdooced a quart ov th' same into me constitootion. Th' result is Oi am t'-day a well man an' justice av th' peace av th' town av Cornville. Marriages performed while you wait, \$1; engraved certificates, 50 cents extry.'"

"Think av that, now!" exclaimed Mrs. Dugan. "An' we was afther payin' two dollars fer th' same job!"

"Whist!" said Mike, "list t' phwat th' doctor book goes on sayin'. 'Poor sufferer, you who read this,' says th' book, 'hev ye anny av th' follyin' symptoms? If ye hev thim, ye hev an acute case av viulent dyspepsy av th' stomach caused by germs:

"Symptom 1.—Hev ye a tired feelin' afther workin' all day?

"Symptom 2.—Do ye git hungry before meals?

"Symptom 3.—Are yer feet cold?—or hot?—or lukewarm?

"Symptom 4.—Does th' blood run t' yer veins whin ye lift hefty loads?

"Symptom 5.—Is yer hair gettin' thin an top av yer head?

"Symptom 6.—Do ye hear noises wid yer ears?

"Symptom 7.—Does yer stomach feel bad whin hit a jab wid yer fist?

"If ye hev anny wan av these sivin symptoms, th' black-robed figger av Death is hoverin' behint ye! Haste! Do not delay! Take wan glass av "King av Pain" before aich meal. Shake well before usin'. Folly th' directions. None genuine widout th' name blown in th' bottle.'"

He looked up at his wife and nodded solemnly.

"Oi've got that wan," he said; "an' Oi've got nummer 7, an' nummer 10, an' nummer 12, an' ivery wan up t' nummer 28, an' nummer 31, an' 32. No,"—here he corrected himself quickly,—"that wan's fer ladies. Oi hev not that wan, but Oi hev plenty widout ut. Eighteen koin's av germ bugs Oi hev. Ye'll be afther havin' Father Garrity prache th' sermon over me, Mary? 'T is a fine gift o' spache he has. An' ye'll be tellin' him Oi'm wan av th' Dugans thet was kings av Oireland in th' ould days?"

"Wurra! Wurra!" moaned Mrs. Dugan. Mike looked at the book with an interest hardly in keeping with his prospective early demise.

"Look at ut, Mary," he said; "'t is a foine book. Here be th' photy-grafs av ivery wan av th' germ bugs printed in ut. This wan wid th' sivin legs—Oi've got this wan, an' this wan wid th' long tail, an' this wan, an' this wan loike a lobster, Oi hev. This wan Oi hev not, but Oi'm full of this wan thet looks like a grass-

hoppy. 'T is th' sorosis av th' liver germ bug he is."

"Full av thim?" asked Mrs. Dugan, surprised, "an' d' ye hev more than wan av aiche?"

"wan av aiche germ bug? Mary, by 'wan av aiche germ bug? iMary, by th' symptoms av me Oi hev sivin million av germ bug nummer twelve, an' Oi hev eight hundred thousand million av germ bug nummer sivin, an' Oi hev twenty-eight hundred thousand hundred billion million av nummer thirteen, an' forty-sivin billion—"

Mrs. Dugan, who had been leaning over his shoulder, moved away suddenly. She wiggled her shoulders and scratched her arm nervously.

"Ugh!" she said, "Oi kin feel wan av thim bitin' me. Wud ye betther hev a bit av roach powder sprinkled an ye, Mike?"

"'T wud do no good," said Dugan, hopelessly. "Nawthin' will do anny good but 'King av Pain.' 'T is printed out so in th' book. But wan thing will cure th' forty-six symptoms an' eighteen cases an' billions av millions av germ bugs Oi hev, an' that wan thing is th' 'King av Pain.'"

"Put on yer hat, Mike, an' run out an' git a bottle. Th' money is behint th' clock. Waste no time, but git ut."

"D'ye think Oi'm a fool, Mary?" he asked. "D' ye think Oi'd bring mesilf home full av germ bugs widout bringin' a bottle av th' cure fer thim, if there was anny t' be had? Sure did Oi thramp th' city over, huntin' th' 'King av Pain.' Not wan droog store has th' 'King av Pain.'"

"But Mrs. Murphy—"

"Av coorse! Don't tell me! 'T was befront av Clancy's grocery. Th' gentleman in th' carridge wid th' big gasoline torch was sellin' ut — wan dollar th' bottle an' a solid goold

fountain pen wid iv'ry bottle. Thry ut an' use ut, an' if not satisfied bring back th' impty bottle an' get th' money back an' kape th' pen. Oh, yis! 'T wud be aisy t' git th' 'King av Pain' if th' gintleman was still remainin' at th' front av Clancy's. But he is not, nor has he been for a week, Mary. 'T is gone he is."

"Gone!" she said. "But, Mike, if he's gone, phwat will ye be doin' fer th' germ bugs in ye?"

"Phwat shud Oi do," he asked, "but iexpire dacintly in me bed loike many another Dugan since th' start av th' worruld? 'T is th' only way t' murder th' germ bugs. 'T is t' bed fer me, Mary; Oi'm in a bad way."

"Do ye feel anny av th' symptoms bad at th' prisint moment, poor felly?" she queried. Mike nodded.

"Wan av thim Oi feel persistent at th' moment," he said. "'T is th' wan, 'Do you feel hungry before meals?' Oi feel that wan in th' regions av me viulent dyspepsy, an' 'tis a bad sign. But mebbly Oi will tek a bite t' eat, seein' th' table is ready set. 'T will do no harrum, me bein' as good as dead, annyhow."

He ate feebly. The results were unusually bad.

"'T is this way," he explained, as he let his wife aid him in his preparations for bed, "Oi've got so many av thim dang symptoms there's no room fer all av thim at wan toime, an' they must tek their turns loike forty-sivin kids wid wan roly skate bechune thim. An' so 't was nummer two, 'Do ye feel hungry before meals?' a bit back, an' now 't is nummer eighteen, 'Do ye hev a full feelin' afther eatin'?' Wan goes an' wan comes, but th' germ bugs keep multiplyin' continuous. Iv'ry minute th' germ bugs double up in nummer, an' whin there be so many

there's no more room for another wan av thim it's good-by, Dugan !"

Next morning the patient remained in bed. When Mary brought up his breakfast he complained of headache, a sinking sensation of the lungs, beating of the heart, pain in his left side when he pushed his thumb between the third and fourth ribs, a soft spot on top of his head, backache, and fifty-two other assorted symptoms. His appetite was so poor that he could hardly eat anything on the tray. He had a severe cough, of a bad variety, since it was intermittent, occurring only when Mary entered the room. This soon became worse, when Mary mentioned that he did not seem to cough when she was below, and it was thereafter unintermittent.

It would have been a long and tiresome day for him but for the solace of literature. He propped himself up in bed and read, but it was costly pleasure. By evening he had read his pamphlet through eight times, but had accumulated ten new diseases and several new symptoms, including flashes of light in the eyes, pain at the base of the brain, cold perspiration, and sneezing. He knew that he was a dying man. When Murphy dropped in, after dinner, to see why Dugan had been off the job that day, the sick man explained his condition and his visitor agreed that it was serious.

"'T is bad, Mike," he said ; "an' 't is sorry t' see ye go Oi am ! But 't will be a great blessin' t' Loiddy O'Toole, her b'y Pat bein' next in line fer yer job. 'T is an ill wind that blows nobody good."

Mike's first impulse was to get out of bed, but his eye fell on his pamphlet and he sank back with a groan. A job is a job ; but, after all, a dying man is a dying man, too, and can

not push aside symptoms and diseases to merely keep Pat O'Toole out of his job.

"Oi'm near gone, Murphy," he said, weakly.

Murphy shook his head and smoked in silence.

"Mike," he said, suddenly—"about Mary. Do ye lave her well fixed, or phwat ? 'T is a sin t' lave her hard up, if there's not some bit ov money put by."

Dugan stared at Murphy.

"Because," said the latter, "'t is me belief that iv'ry man phwat's on his dyin' bed shud tek out a policy av loife insurance. But Oi am not wan av thim phwat is crazy an' th' subjick, an' divil a bit good kin Oi see phwy a loive man shud tek out a policy av loife insurance, an him well an' able t' earn a dacint livin'. But whin a man's dead, he's dead, an' th' pay shtops, an' phwin, loike you, he's dyin', an' knows ut, 't is toime t' tek out a policy av loife insurance."

Dugan still stared.

"'T is a good invistmint, Dugan," urged Murphy, "because ye can't lose. Ye pay in, mebbly, tin or twinty dollars t'-morry, an' in foive days ye'll be a dead wan, an' ye'll git back wan thousand. Th' on'y way ye kin lose is by livin' an' Oi'll bet anny wan ye don't lose. 'T is a cinch, Mike ! Ye can't bate it."

Dugan moved uneasily and smiled sickly.

"'T is wan av th' grandest evints av civilization," said Murphy, "'is this loife insurance. T' think, whin ye've got so many aches an' pains an' symptoms thet ye'd pay out money t' be dead an' rid av thim, along comes a loife insurance company an' hands ye a thousand dollars fer dyin'. 'T is gittin' money fer nawthin' at all !"

Dugan looked hard at Murphy. He

opened his mouth twice before he could find words.

"'T is no need av ye bein' so dang sure Oi'm dead, Murphy," he said, with petulance.

"And ain't ye?" asked Murphy, surprised.

"Sure Oi am!" said Dugan, "but 't is annoyin' fer a dyin' man t' hear ye say so. 'T is different from phwat Oi've heard they be sayin' t' th' dyin'. Soothin' worruds they do be sayin' t' th' dyin', Murphy, an' not—not so—so cheerful t' see thim go. Don't worry, Murphy! Oi'll die, sure enough! Oi'll not disappoint ye! But don't be so dang eager about ut!"

"Oi know a felly," said Murphy, thoughtfully—"his name is Comstock. Oi'll sind him 'round in th' mornin'."

"Is he—is he th' undertaker?" faltered Dugan.

"He's a loife insurance policy man, an' a good wan," said Murphy—"an' he's no amachure. He kin tell ye more av th' advantages av loife insurance policies in wan minute than Oi kin tell ye in wan year. 'T is a pleasure t' hear him talk, Dugan."

Dugan frowned.

"Oi dunno do Oi want wan av thim policies," he said. "If I shud git rid av th' germs—"

"'T is that is th' beauty av th' thing!" explained Murphy, cheerfully. "'T is always good, Dugan, an' ye can't lose. If th' germs immigrate out av ye, ye kin stop close t' th' blast whin it goes off, an' 't is no matter do they foind anny av ye or not, th' policy pays up! Ye can't lose. But wan thing, Dugan,"—and he rose to go—"whin he comes, this Comstock, thry t' look well an' hearty. Let on t' him ye be a well man. 'T is a—'t is a queer idea th' loife insurance policy men hev t' give policies t' well men only." He leaned

over Dugan and whispered, "Say nawthin' t' him av symptoms, ner germs, ner annything."

The next morning Dugan dressed as soon as he had finished breakfast and sat down in the parlor to await the coming of Comstock. The latter came early.

"Mr. Dugan?" he asked, with that kindly, whole-souled interest that only insurance men possess. "Glad to make your acquaintance! My name is Comstock. I represent—"

He ran on for about an hour. He proved to Mr. Dugan that his company was the best and most liberal, strongest and most conservative, and that the particular policy he recommended was the only one any sane man could think of taking. He compared it with every policy of every other company, and metaphorically spat on all the rest. He compared it with all the other policies issued by his own company, and metaphorically spat on them. He showed Dugan statistics, and formulas, and computations in black figures and red figures, including amounts in dollars ranging from \$497,000,000, that was something, down to \$17.64, which was something else; and, when Dugan was thoroughly convinced, Mr. Comstock said:

"But," you will ask, 'if our non-participating twelve year policy grants the insured the tontine privilege plus the benefits of the dividend clause of the gold-bond cumulative-reduction policy, without the risk of the drawbacks accorded to the holder of our full-term, eighteen-year conservative beneficiary endowments, why—why does not the twelve-year reactionary cut-off policy of the Immutable Company do the same?' I will explain why it does not.

He explained it.

Dugan, by the time it was explain-

ed, had a new symptom—a dizzy feeling in the brain. It was more pronounced than any other symptom he had yet had.

Mr. Comstock already had out his pen.

"Age?" he asked—"age of father, mother, father's mother, father's father, mother's mother, mother's father? Age of brothers, sisters?" Then he paused, and asked, impressively, "Have you ever had dyspepsia?"

The life insurance examinee's moral debasement seized Dugan. He did not hesitate. A man may be dying of dyspepsia; but, when the examiner asks the question, no man ever answers "Yes." As soon as the sheet of questions is spread out on the table the sickest man becomes whole. He has never had fits, measles, bronchitis, or shortness of breath. He has never had consumption, insanity, or spasms in his family. He and his ancestors back to the days of Noah have been sound in wind and limb. He has not smoked too much, or used liquors to excess. His habits become temperate and his health good. He becomes miraculously cured. His chest swells, he breathes deep, he stands erect, and his eye gleams.

Dugan shed a million germs a second, for about sixty seconds. He could not remember an ill day, or a pain, or an ache, or a symptom. He stood, proudly erect, a marvelous example of perfect manhood and health.

He signed his name on the line the agent pointed out, was told that the examining physician would see him the next day, and Mr. Comstock departed, quickly and unhesitatingly.

For a moment Dugan stood dazed. He was so well that he felt sick. Then his eye fell on the paper Mr. Comstock had left behind. Dugan ran

to the door with it, but Mr. Comstock had disappeared. Mary looked in from the kitchen door.

"Is he gone, Mike?" she asked; "an' how did ye shtand ut, poor man?"

"Oi dunno!" he said; "Oi dunno! Oi dunno anything, yit, Mary. But wan thing Oi do know—'tis mortal sick Oi must be, fer niver wan av thim symptoms kin Oi feel. Oi'm so sick Oi feel well, Mary! Th' felly talked thim germs out av me, fer th' minute, beloike! but 'tis back they'll be, immejut. Oi feel wan av thim now."

He sank into a chair and listlessly gazed at the paper he held. Slowly he realized that it was a printed paper, and suddenly he saw the words "KING OF PAIN" in large letters at the head of the page that was toward him. "EXPOSED," it also said.

"If I live till th' doethor comes," he said, slowly, "t' examine me, thin Oi can die anny toime. An' 't will not be long, there bein' no cure fer me but th' 'King av—'"

His eyes caught this sentence halfway down the page in the expose he held in his hands:

"'King of Pain' is, in fact, no more than four parts bad whisky with six parts water. Every result obtainable by the use of 'King of Pain' can be quite as well obtained by the use of simple whisky and water!"

Dugan read the paragraph in italics twice.

"Mary," he said, "hand me my hat for Oi will be goin' down t' Grogan's. Oi see by th' paper Grogan has got a cure for th' germs in me."

He read the paragraph again.

"Shud an insurance policy doethor call t' see me t'-morry mornin', Mary," he said, opening the door, "spake him koindly an' say"—and he

scratched his ear and grinned—"say th' corpus has decided t' thry th' twilve-year reactionary cut-off policy av th' Immutable Insurance Company phwat Mr. Comstock spoke so hoighly of."

He closed the door and Mary stood looking at him. It opened almost im-

mediately and Dugan come in. He walked up to her, and, before she could realize his intention, kissed her.

"Oi know wan av two things," she said to herself, when he had gone out again, "ayther Mike has hed a dhrink, or he's goin' t' hev wan moighty suddint."

How the Automobile Creates Business

BY HERBERT N. CASSON IN PEARSON'S (AMERICAN).

When the railroad was first made practicable it was a common question to ask what was to become of coachmakers, innkeepers and horsedealers, but it was soon found that the railroad created ten new industries where it displaced one. It is evident that the automobile will do the same thing and the writer points out in this article some results of the introduction of the automobile.

THE rising tide of automobile trade has deepened the water in many a remote harbor. In the "Automobile Trade Directory" I find that thirty-seven tailors are now making a specialty of automobile clothes. Lamps for automobiles are being made by forty-five concerns; horns by fourteen; hampers by twenty-three; gloves by twenty; clocks by eleven, and cushions by twelve.

Apparently there is no connection between opticians and automobiles, yet here are seventeen who have begun to manufacture eye-shields. Ten makers of portable houses have rubbed out the word "house," and painted in the word "garage," thereby increasing the activity of their cash registers. Nineteen soap-makers have jumped through the open door of opportunity, and commenced to make special brands that are guaranteed to obliterate grime from the chauffeur's hands and green oil from his hair. A dozen trade journals—"too many," say the manufacturers—are distributing the news of the business.

"What is to become of the coachmakers, innkeepers and horsedealers?" demanded Admiral Sir Isaac Coffin in the British Parliament, when it was proposed to give a charter to Stephenson's first railroad. The admiral soon found, to his surprise, that the railroad created ten new trades for every one that it displaced. And the automobile will do no less. In spite of what a few enthusiasts are predicting, the automobile will not decrease the traffic of the railroads.

On the contrary, the auto is the best drummer the railroads have ever had. It cultivates the instinct of travel, upon which the railroads largely depend. It supplies them with a new kind of highly profitable freight. Last year, for example, about seven thousand freight cars were needed to transport automobiles from factory to garage. And so far as hurting the horse market is concerned, here is the fact, however it can be explained: twelve years ago, the average price of horses was sixty-five dollars; to-day it is a hundred and thirty. Knowing this, what

horse can feel resentful of its tooting competitor?

Absolutely new professions are springing up to serve this wheeled Pegasus. There is the chauffeur. Is he not a new species of man? Part coachman, part mechanic, part traveling companion—on what level of the social scale can we place him? He has points of contact with all classes. No matter how snobbish his employer may be, it is somewhat difficult to feel that a man is a social inferior when he converses of "float-feed carburettors" and "epicycloidal transmission." In one of the most popular of English automobile novels, a viscount masquerades as a professional chauffeur, and, as he might have expected, no one penetrates his disguise. There were so many other chauffeurs with the manners of viscounts that he passed through sixteen chapters without detection.

The ideal chauffeur, no doubt, still has his residence mainly in fiction. But the fact remains that his profession calls for a remarkable combination of accomplishments. Above all, he must have what we might call autosense—a sort of mechanical presence of mind. The first school for chauffeurs was opened in 1904 by the New York Y.M.C.A., with a hundred and thirty-six students. Purdue University, Indiana, announces that it is now prepared to turn out chauffeurs as part of its finished product. So, in a year or two, if we notice the letters M.S.A. after a man's name, we may know that it means "Master of Scientific Automobiling."

"Two of our best chauffeurs were milking cows and hoeing potatoes a year ago," said C. B. Brokaw, principal of the New York school; "to-day they are getting a hundred dollars a month each."

Another new profession, one which is still under the head of unfinished business, is road-making. How to make a dustless and durable road—that is the problem. Some road-makers are experimenting with oil and tar, to make dust impossible. Steel roads have been suggested by Charles M. Schwab. Several states are taking up the work in a large way; Pennsylvania has just spent six or seven millions; New York has just voted to spend fifty millions within the next ten years. The "Old Cumberland Road" between Washington, D.C., and St. Louis, which comes perhaps the nearest to being a satisfactory inter-state highway, will probably be the first road to be made really fit for automobile traffic.

In that mysterious region of an automobile that lies under the hood, there are parts of the machinery that require an entirely new kind of steel, a certain glassy quality which is now being made especially for the manufacturers of automobiles. And so it is in the other trades that supply raw materials; dealers in leather, brass, aluminum, wood, in everything that enters into the construction of the machine, are being forced to specialize to meet the demands of this new customer, who is clamoring for something better than the best.

Then there is real estate. What the automobile will eventually do in opening up new territory is a dream of millions. What it has already done is astonishing. The secret of its influence upon land values is this—it is not limited to a certain track, like a railway train. It goes wherever there is a road. In New York State, for instance, there are about eight thousand miles of railway and seventy-four thousand miles of roads. An automobile can reach nine times

as much territory as the railway does—more, if we take into account the fact that a railway train stops at its stations only.

With a good automobile, a doctor can visit a patient at least thirty miles away, and return to his office the same afternoon; he becomes the centre of a circle a hundred miles in diameter; he has a practice that covers an area of three thousand square miles. A city-bred family can now live in the country without leaving their physician, their lawyer or their friends behind them. Our cities will become less like pyramids and more like parks. The country home and hotel will flourish. Already the deserted farms of New England are being sold for fairly remunerative prices.

Then years ago an automobile attracted as much attention as though it were a giraffe, even in our large cities. To-day it goes wherever the roads do. It has climbed Mount Washington—six miles—in less than twenty-one minutes. It has scrambled up Pike's Peak, and spun through the sand of the Nevada Desert.

Even in its original character as a racing toy, the automobile does more to put money in circulation than most of us imagine. A race such as the recent one for the Vanderbilt Cup is a sport for kings—money-kings, at least. Those nineteen racers that whirled around the course like the rings of Saturn—every one of them represented a small fortune. Five hundred thousand dollars could not have bought them. Five hundred flagmen were employed to police the track. Gangs of laborers, the week before, had oiled the twenty-eight miles of road until it shone like a glossy strip of leather belting. Fifteen telephone booths around the

course sent bulletins to the official megaphoner at the grand stand. Dozens of farmers got a pocketful of nickles apiece selling sandwiches and milk. And, best of all, at this particular race, an American car proved that it was practically the equal of the renowned racers of Italy and France. All of which means business, the investment of more capital, the payment of more wages, the greater comfort of more American homes.

"Give the races full credit for developing the automobile trade," said a well known New York automobilist, Mr. E. R. Thomas, when the writing of this article was mentioned to him; "the automobile is the machine of speed, and always will be. A race is a fair test. It enables the fittest machine to forge to the front. Generally, in the winning of a race, 90 per cent. of the credit should go to the car and 10 per cent. to the chauffeur, though now and then, as in the case of Lancia, the chauffeur is the main factor."

What the grand total is, in this carnival of expenditure, no one can say. Even a guess might come fifty millions short of the mark. As we have seen there have been spent during the year more than thirty-six millions for new machines and about seventy millions in the running of all automobiles, old and new. Add to this the millions for roads, and the still greater sum for country homes. Then add the rise in suburban real estate and the innumerable small amounts that are enriching the farms and villages. Nothing short of this could give us an accurate idea of what the automobile means to the United States, in the expansion of our trade and the promotion of our prosperity.

Investigations in Blood-Relationships

BY PAUL UHLENHUTH IN MONTHLY REVIEW.

By means of biological serum research, Dr. Uhlenhuth has been able to establish some remarkable facts, notably the blood relationship of man and apes. His investigations have enabled him to distinguish between the blood of men and animals, even when the blood is dried up.

MY investigations are based on the biological serum research which, on the threshold of the twentieth century, we greet as the youngest, most promising child of our bacteriological science. The epoch-making discovery of Behring gave us doctors a preventive against and a remedy for the murderous plague, diphtheria, and he thereby opened up entirely new, unsuspected paths to the investigation and combating of infectious diseases. This remedy is the serum of horses which have been treated with the poison generated by diphtheria bacilli. If a certain quantity of this poison be injected into an animal, the latter sickens and dies. If, however, quite small doses are employed, the animal overcomes the illness, and once it has overcome the illness, increasingly large quantities can with impunity be injected into it. The animal resists the influence of the poison by producing a counter-poison. This poison accumulates in the serum of the animal in question, and can easily be obtained by bleeding it.

By admixing the same with the poison the latter can in the re-agent glass be rendered inefficacious; in a like manner this serum, when injected into the body of a human being is able to develop the same poison-neutralising influence with healing or protective effect.

Specific substances are thus produced in the animal's body. Specific immune sera, as antidotes against other vegetable and animal poisons, have been produced in the same way;

for example, against ricin, abrin, and croton, against the poisonous eel-serum, and against the deleterious snake-poison.

When animals are treated with bacteria, e.g., with the germ of the dreaded cholera, they do not succumb to small quantities of the bacteria, the animal's body, as it were, sets up a defence against them, and produces in its serum substances which collect these bacteria in clusters and decompose them. And, as a matter of fact, this influence is exerted only on the cholera bacilli used in the injection, not on other micro-organisms. On the other hand, animals into which typhus bacilli have been injected produce substances which collect and decompose only typhus bacilli. Again quite a specific reaction.

If, instead of such a deposit of bacteria, a deposit of blood is introduced into the animal, exactly the same substances make their appearance. The corpuscles are collected and decomposed by the serum of animals so treated. Moreover, substances were discovered which, when added to the serum freed from blood corpuscles, produced a sediment (praecipitine) in the former. Bordet found that also, after injecting cow's milk into the serum of rabbits, sediments are formed which cause cow's milk to yield its albumen (casein). This reaction was strictly specific, so that Wasserman was able to distinguish the different kinds of milk. This strictly specific method induced me to institute in-

vestigations with a view to discover whether it were not possible in this way to distinguish the albuminous substances of different birds' eggs.

After numerous experiments I ascertained that the serum of rabbits, injected at intervals of several days for a lengthy period into a solution of the albumen of hen's eggs, produced, when added to such an albuminous solution, strong flaky sediment, but not in solutions of other kinds of albumen. On the basis of the proved specificallness I further succeeded in distinguishing with certainty between the albuminous substances of different birds' eggs, except in the case of birds nearly allied in species. This observation was so exceedingly interesting, and was specially important, because it had hitherto been impossible to differentiate these albuminous substances by chemical means.

I was also able to show that all chemical albumen-reactions could not compete with the fineness of this biological reaction, for the proof was possible with an albuminous solution of one gramme of albumen to 100 litres of water, whereas the chemical albumen-reactions utterly failed with a solution of one gramme of albumen to 100 litres of water.

In view of the specificallness and the extraordinary fineness of this biological reaction I wished now further to ascertain whether the albuminous substances of the hen's egg could in the same way be distinguished from those of hen's blood. To settle this question I injected hen's blood into rabbits; the serum of the rabbits so treated produced when added to a solution of the albumen of hen's eggs, a slight turbidity only after a considerable period, whereas in a thin varnish-colored solution of hen's blood it at once

produced a strong sediment. This experiment proved that it is actually possible to establish certain differences of the albuminous substances in hen's blood and hen's eggs. Simultaneously, however, another extremely important fact was established by this experiment. The serum referred to produced a sediment only in a solution of hen's blood, while all other solutions of the blood of the most varied kinds of animals remained perfectly clear.

The groundwork was thus provided for the method of distinguishing the different kinds of blood.

By now treating rabbits in an exactly similar manner with the blood of oxen, goats, or pigs, I was able always to obtain sera which produced a sediment only in the blood solutions used in the treatment.

A rabbit treated with human blood yielded a serum which produced precipitation only in human blood.

The process I have defined has finally solved the question of the differentiation of blood also from the standpoint of the government medical expert, for it occurred with constant regularity that the serum of rabbits into which human or animal blood had been repeatedly injected produced a sediment only in solutions of the blood used in the treatment, even when the blood had been dried up for decades past. This forensic blood-proof was introduced by me into practice, and I have elaborated and developed it in several works. I produced the most different kinds of serum, in order to be ready immediately to ascertain in forensic cases not only human blood, but also other kinds of blood found on any object whatsoever.

I was also the first who succeeded in identifying, not only dried blood but blood that had become putrid.

and blood mixed with the most varied circumstances, in sand, in earth, in water that had been used for washing, etc.

The best, most incontestable proof of the practical utility of the process was furnished by myself. The Prussian minister of justice placed at my disposal numerous objects, preserved from criminal trials long since concluded, on which were blood-stains of whose origin I had no knowledge whatever. My reports, containing the result of my investigation of these blood-stains, were compared with the official records, and in every single case it was found that my diagnosis, whether it was a question of human blood or of the blood of some animal, was correct. The method, which obtained general recognition, has already contributed very largely towards elucidating many trials, and has thus become an effective weapon of justice. The process has been introduced into forensic practice in Germany, Italy, Spain, Austria, Roumania, Egypt, Holland, and also the United States of America. The manipulation of the method demands, of course, the utmost care and conscientiousness, and exact prescriptions drawn up by me must be followed. These prescriptions and the official enactments by virtue of which my method has been introduced into the various countries, are given in full in my book, recently published by Gustav Fischer, at Jena, price 3 marks, entitled: "*Das Biologische Verfahren zur Erkennung und Unterscheidung von Menschen und Tierblut sowie anderer Eiweisssubstanzen und seine Anwendung in der forensischen Praxis*" ("The Biological Process of recognizing and distinguishing the Blood of Human Beings and of Animals

and other Albuminous Substances, and its Application in Forensic Practice?").

In this book, also, are published a large number of expert opinions which I have given in actual criminal trials. Limits of space prohibit me from dealing at length in this place with these opinions. I will give two examples: A man demanded the annuity paid by the government to workmen who are no longer capable of earning a living, stating that he was suffering from haemorrhage. The doctor who was called in found him in bed befouled with blood, but could discover no reason for the haemorrhage. The blood-stained sheet was forwarded to me to examine, and I was able to ascertain that the blood on it was that of an ox. The inquiries thereupon instituted resulted in the discovery that with the object of deceiving the authorities the man had obtained a bottle of blood from the slaughterhouse, and poured this over himself as he lay in bed. Such a deception recalls the story of Joseph's coat (Genesis xxxviii.), which his brothers had dipped in goat's blood in order to make their father believe that something had happened to Joseph. that: "an evil beast had devoured him."

Such deceptions are no longer possible, as a pupil in school here remarked recently on hearing the story related.

In other cases the innocence of the accused was established. A man on whose clothes blood was found was arrested on strong suspicion of having committed a murder. His story was not credited, however, until I proved the correctness of his statement by means of a biological examination of the blood. He was at once released from custody.

The study of blood differentiation has led to still another practical and very important result. It seemed at once probable that this specific reaction might be turned to account in determining the origin of animal organs. There has hitherto been no method that would enable us, especially in these times of dear meat, to discover the truth of reports that certain noble animals, after a severe struggle for life, complete their earthly course in a finely-minced condition in the cooks' shops. This is now an easy matter. If the serum of a rabbit treated with horse's blood be mixed with the suspicious specimens of meat, we can at once discern, by the turbidity which ensues, that it is horseflesh, and it is immaterial for the result of the experiment whether this is in the form of minced meat or sausage, or is in a pickled or smoked state.

But it is not only in the case of comparatively fresh organs that I was able to prove their origin; I have determined with certainty the mummified organs, thirty to forty, even sixty to seventy years old, of men and animals. As, therefore, age seemed to play no essential role in the investigation of such material, I resolved to conduct exhaustive experiments with the oldest organs at our disposal, viz., mummies. Some time ago I applied the biological reaction to a mummy several thousand years old, but with an absolute negative result.

Hansemann and Meyer recently announced that, without being acquainted with my earlier experiments, they have succeeded in determining the origin of two mummies, between 3,000 and 5,000 years old, with the aid of the reaction; they claim that their positive results proved that the praecipitin-reaction loses nothing of

its efficacy even with material several thousand years old, and that thus mummy material can be proved by means of this biological method to be of human origin.

This assertion led me to resume my investigations in this direction, and I experimented with thirty Egyptian and Germanic mummies, but in no case, even by employing the strongest sera, did I obtain a positive result. I cannot, therefore, but maintain that, regrettable as it is in the interest of anthropological investigation, it is as yet impossible to determine the origin of such thousand-year-old mummies. It may be that age has destroyed the reactionary capacity of the albuminous substances in the mummies.

Besides these results of biological experiments with serum, of such an exceedingly practical importance for forensic medicine, another intense interest in natural science has been obtained, viz., the proof of blood-relationship among animals.

As in the case of my investigations with egg albumen, I observed when experimenting with the object of distinguishing between the various kinds of blood that the serum of a rabbit treated with a particular kind of albumen produced a sediment also in the body albumen of nearly related animals, and the idea occurred to me to make use of and to propose the biological reaction for the study of congenital relations among animals. I was able to demonstrate in the re-agent glass the blood-relationship between horse and ass, between pig and wild pig, dog and fox, and between sheep, goat, and ox. The reaction produced was almost quantitatively proportionate to the degree of blood-relationship. What undoubtedly was of the greatest interest from the standpoint of

natural science was the proof of the blood-relationship between man and apes, for, like Wassermann, I was able to determine that the serum of a rabbit treated with human blood produced a somewhat weaker but nevertheless distinct sediment in a solution of ape's blood, it did not produce sediment in any other kind of blood. A further step was now taken, it being resolved to submit to experimental examination, biologically, the blood-relationship between mankind and apes. These investigations were carried out by me and by the Englishman Nuttall.

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Although the conclusion is not to be drawn from these investigations that man is descended from the anthropoid apes with which we are to-day acquainted, a blood-relationship between man and the apes is certainly proved. This biological proof of the blood-relationship between man and apes is worthy of being placed side by side with all the other proofs yielded by palaeontology, comparative anatomy, and the history of evolution; it might, indeed, be justly regarded as the most remarkable and startling proof, as it can be demonstrated to any one *ad oculos* in the re-agent glass.

The doctrine of evolution, as propounded and elaborated by such investigators as Lamarek, Darwin, and Haeckel, thus finds a firm and visible support in biological serum research.

Interesting as these so-called affinity-reactions may be from the standpoint of natural science, they are, as it may be imagined, exceedingly embarrassing to forensic medicine. If, for example, the expert is called upon to distinguish between horse's and ass's blood, between sheep's and goat's blood, between

human blood and ape's blood, insuperable difficulties present themselves, for we have seen that, e.g., a rabbit treated with human blood yields a serum which produces a sediment also in ape's blood. Although this distinction between human blood and ape's blood yields no role forensically with us, it might become important in countries where apes are plentiful.

Efforts have been made, hitherto in vain, to discover an incontestable solution to this problem. On the basis of numerous experiments which I have conducted during the present year, and the results of which I have just communicated in a paper read before the seventy-seventh meeting of German Naturalists at Meran, I have succeeded in accomplishing the task in a very simple manner. My investigations proceed from an expert opinion which I was requested to give by the public prosecutor. Early in this year a poacher's walking-stick, on which were blood-stains, was forwarded to me. The man, to whom it belonged, was suspected of having killed a deer and a smaller animal—a hare, rabbit, or fox—and of having carried them away on his stick. He asserted, however, that the stains on the stick were caused by goose's blood. His mother, he said, had killed and hung up several geese; the stick happened to be standing underneath them, and so the blood had dropped on to it. The serum of a rabbit treated with goose's blood when mixed with a solution of the blood on the stick produced no sediment; it was, therefore, not goose's blood. In the same way I proved that it was certainly not deer's or fox's blood. It now remained only to be seen whether it was hare's blood. I must premise that the view has hitherto prevailed

that nearly related animals do not re-act on a mutual injection of their blood with the formation of sediments. If, consequently, I desired to prepare a serum to prove the presence of hare's blood I must not use a rabbit, which is, of course, closely related to the hare, but an animal in no way related, e.g., a hen. I injected hare's blood, therefore, into hens. These animals now yielded a serum which produced a sediment in hare's blood, but also in rabbit's blood, thus showing the affinity reaction. A distinct reaction also appeared in a solution of the blood from off the stick, but, for the reason just mentioned, I was still unable to decide whether this was hare's blood or rabbit's blood. In spite of the prevailing view that closely related animals do not re-act on a mutual injection of their blood, I now injected hare's blood into rabbits. And these rabbits yielded a serum which reacted only in hare's blood, but not, as could only be expected, to rabbit's blood, i.e., blood of the same species. Thus I was then able to establish the fact that the blood

on the stick was hare's blood and not rabbit's blood.

By means of these experiments I have discovered a method of distinguishing closely allied kinds of blood. In a similar way I then succeeded in distinguishing hen's blood and pigeon's blood. I was able also to distinguish human blood from ape's blood, by treating ape's with human blood. The ape's yielded a serum which produced a sediment only in human blood, but not in ape's blood.

We can, therefore, console ourselves with the knowledge that there are fine differences in the composition of the albumen of the blood of men and of apes; a fact which the opponents of Darwin will most probably turn to account without troubling to criticize. These experiments incite to further research, with a view to ascertaining whether proof cannot be found of the finest distinctions in the albumen of the blood of the various races of animals and of men. I am engaged on such investigations, and hope they will produce results of interest to anthropological research.

Helping Words

WHAT is more vexing than needless delay? Some little thing needs to be done.

On it depends the doing of a dozen other things, all of which must wait until the first thing is accomplished. Thus sometimes a little thing which might be done in an hour or a day hinders other matters which are of great importance, and wastes time which is of the utmost value.

Persons who desire to be useful in the world should learn to do things promptly. Delay is often disobedience.

It is better to refuse to undertake a thing than to undertake it and delay and dally until the hindrance becomes ten times as grievous and injurious as a direct refusal would have been at the beginning. If one man says he will not do a thing perhaps someone else will do it; but if one says "I go," and goes not, he not only fails to do the work himself, but he prevents others who would have done it and causes an amount of trouble of which we frequently have no conception.

The Advent of the Dress Agency

STRAND MAGAZINE.

Thousands of women with only moderate means at their disposal find the dress agency a great boon. The agency secures handsome gowns, that have only been worn a few times, and sells them to its clients or else gives advice to them as to styles and materials for a small sum.

ONLY a very few women know what a dress agency is, but as soon as its usefulness becomes more widely appreciated there is some hope that the wits of our leading dramatists may be sharpened up on something other than the Englishwoman's lack of taste. To describe it shortly, the dress agency is a kind of association, or club, to which women pay a yearly subscription that entitles them not only to obtain advice as to how to dress, but to purchase smart frocks for extraordinarily small prices.

In these days of unlimited credit wealthy women are more or less obliged to order new frocks constantly, for if they wish to continue being well dressed they must keep on the right side of their dressmakers. Consequently many frocks that cost a great deal of money are discarded after they have been worn hardly half-a-dozen times. Women of the last generation used to pass these discarded frocks on to their maids without giving a thought to their value; but to-day, when bridge and other forms of gambling often run away with a good deal of money, they send them to some fashionable dress agency, where they fetch prices which, if nowhere near their cost, are at any rate better than nothing. It is no unusual thing to-day for the woman of means to drive in her motor, or brougham, to the particular dress agency she patronizes, and to send the footman up with a box of gowns that may have cost her perhaps hundreds of

pounds, but which she is glad to get rid of for eight or ten guineas apiece. In this way there are sometimes wonderful bargains to be picked up. It is no uncommon thing for frocks that cost sixty, eighty, and one hundred guineas, and were made by one or other of the world's most famous houses, to be sold for a ten-pound note, in just as good a condition as when they were new. At the Bond Street Dress Agency, for instance, a week hardly ever passes when there are not to be seen frocks by such famous makers as Doucet, Beer, Perdeaux, Block, and Virot, of Paris; Redfern, Jay, Paquin, Ernest, and Worth, of London; and by the most famous Viennese houses.

It must not be thought that the dress agency is in any sense of the word an old clothes shop. It is nothing of the kind. For not only does it exclude all gowns except those that are practically new, but, in addition, it deals wholesale with most of the big dressmaking firms, whose models it purchases in large numbers at a reduced price, which enables it to offer them to clients at little more than half what they would have cost if they bought them direct. The famous dressmaking firms would not dare to dispose of one of their models to an ordinary customer at a reduced price because that would lower their prestige, but they have no objection to disposing of those models they have not got rid of to an agency at trade prices. Taking advantage of this fact most agencies do a regular business

of this kind not only with all the large dressmaking houses, but with such firms as supply underwear, which they can thus offer new and of the best quality at moderate prices, since all middlemen's profits are saved.

All is grist that comes to the mill of the dress agency. Hats, gowns, cloaks, furs, lace, feather boas, corsets, hose, boots, shoes, fans, and sometimes veils and gloves are to be had there, so that a woman can obtain a complete outfit at about one-third of what it would cost in the usual way and without the trouble of visiting six or eight different shops. Many agencies make it a special feature to supply outfits for India and the colonies, and the wives of officers going abroad frequently avail themselves of this fact, and not only get their things very cheaply, but find out without any trouble exactly what they will want. For it is one of the chief offices of a dress exchange to advise its clients on all points connected with dress. The manageress in charge of such a concern must be a woman with so much experience and of such exceptional taste that not only can she tell those who come to her what sort of clothes they will want for every conceivable purpose, but can tell instantly what style of frock and scheme of coloring will best suit each individual. Nor do her qualities end there. Memory of a peculiar kind is also essential, for her mind must become automatically familiar with every garment that passes through her hands, so that, when a client requires a gown, one or more particular frocks suggest themselves at once as suitable, and these can be tried on straight away without the tiring necessity of looking through a large number of unsuitable dresses. Attached to every agency, also, is a

dressmaking department, where the necessary alterations can be made by skilled dressmakers, for of course it is impossible to always find a gown to exactly fit a customer.

The actual system on which dress agencies are carried on is very simple. Those who occasionally have gowns to dispose of can become members of the agency by paying an annual subscription, just as they would to a club, such a subscription usually varying from half a guinea to a guinea per year. In addition to this the dress agency deducts a commission of half a crown in the pound from whatever the goods disposed of fetch, while they are also able to show a good profit over the business that is done in new model gowns, underlinen, and so on. Very often many of the clothes disposed of at second-hand prices are actually new, for sudden bereavements, court mourning, or unexpected journeys abroad are sometimes responsible for the necessity to dispose of absolutely new things at practically anything they will fetch, since it would not do to wait until someone who would pay a big price for them came along, in case by that time they were out of fashion. Usually those who send their things to a dress agency place a reserve price upon them for which they may be sold after two months if no better price has been offered for them in that time. One other point yet remains to be touched upon. It frequently happens that, owing to some slight mistake in the fitting, the dressmaking firms have left upon their hands gowns that have been sent back to them by rich clients whom they did not please. They cannot afford to offend such clients by insisting that they should pay for these, and consequently they are only too glad to get rid of them to an

agency for what is very often only their cost price. The clients of the agency can thus sometimes buy for eight or nine pounds a new garment for which the maker would have charged his or her customer twenty or twenty-five guineas.

There is no end to the usefulness of the dress agency to the woman of moderate means. If she went to some fashionable house for her clothes she would have to pay such a fashionable price as from forty to perhaps a hundred guineas for a smart evening frock. By going to an agency she can get a gown which is as good as new—which, indeed, often is new—and which is very likely by the particular dressmaker whose style she likes best, for eight, ten or fifteen guineas ! The woman with less means still at her disposal can get frocks by dress-makers of somewhat smaller fame for as little as three or four guineas. There are, indeed, bargains in every department. To begin at the top, let us deal with hats. The woman with a large income thinks nothing of buying six or eight hats at a time, and of paying many guineas apiece for each. Very often she gets tired of some of them and sends them off to the dress agency when they have been worn perhaps a half-dozen times. If they are by the leading makers, their style, apart from what they are trimmed with, may insure their fetching perhaps as much as thirty shillings or two guineas—often less than a fourth of their cost. But if the name in the lining is not a very well known one they go for as little as fifteen shillings. For five pounds the woman of moderate means can thus purchase the hats for which her richer sister paid thirty or forty guineas, while a touch from the deft fingers of the agency's milliner will make them as good as new.

In the matter of gowns of all sorts the bargains to be had are equally phenomenal. No matter for what purpose they are required, the dress agency, if it is a good one, will be able to supply what is wanted. The sporting girl will be able to get riding habits and boots, golf dresses and boots, shooting costumes and boots, as well as hats for the moors and for all such rough purposes. Motor coats and rugs, fishing boots, and yachting costumes will also be there for her, and, if she cannot find just what she wants, the manageress of the agency will probably know of some client who possesses something of the sort required and is willing to dispose of it.

The river girl will be able to buy for ten pounds or less such a stock of pretty muslins, hats, and parasols as will rouse the envy of all her friends. She who hopes to make a conquest at some important garden party or other out-of-door function may be able to get for a five-pound note some dainty frock by Beer, Paquin, or Worth that must have originally cost twenty or thirty guineas, and which even her bitterest enemy will have to admit is a perfect dream. She who aspires to be the belle of the ball will find an immense variety of exquisite gowns to choose from, for, for some reason or other, rich women seem to get tired more quickly of their evening gowns than of anything else. There are really exquisite evening costumes to be had for about ten pounds, but if this is too much there are plenty more by good makers, though of a rather simpler character, which can be had for half that amount, or even less.

Three or four pounds will purchase the smartest of outdoor dresses, while for the same amount are to be had exceedingly smart and stylish

matinees, tea gowns, and opera cloaks. Where furs are concerned, the bargains to be had are particularly remarkable when it is considered that these are things which keep their value and wear much better than dresses. It is no uncommon thing for the dress agency price of a really first-class set of exquisite sables -- that is to say, a muff and stole—to be as little as fifty pounds, whereas their original cost was probably nearly three times that amount. To the

woman of moderate means fifty pounds for a set of furs is too large an item to be considered, but there are plenty of other skins more suited to her purse which at some time or other pass through the dress agency's hands. The reduction, for instance, on ermine is much greater than on most other kinds of fur, while pretty sets of grey squirrel—always becoming and fashionable—can generally be had second-hand for quite a few pounds.

Keep Cool

Don't hurry so. There's time, my friend,
To get the work all done ;
Before the world comes to its end,
Just take some time for fun.
What's all our living worth unless
We've time enough for happiness ?

Don't flurry so. Just wait, keep cool !
Your plans are all upset ?
Ah, well, the world whirls on by rule,
And things will straighten yet.
Your flurry and your fret and fuss
Just make things hard for all of us.

Don't worry so. It's sad of course,
But you and I and all
Must with the better take the worse,
And jump up when we fall—
Oh, never mind what's going to be,
To-day's enough for you and me !

A Royal School of Embroidery

BY ANNA B. DODD IN CENTURY MAGAZINE.

Near the National Museum in Athens is a wide white building where a hundred and more Athenian girls and young women are busily engaged making embroidery. This is the school in which the royal family of Greece has taken such an interest and the story of the foundation of which is told in the following extract.

EARLY in the Turco-Greek war of 1897 thousands of Thessalian women started on mules and donkeys to find in the south a refuge from the dreaded horrors of an invading Turkish army. Whole villages were deserted. Trailing down from crag-like mountain heights, creeping through leafy defiles, wending their tedious way from stony ridges to grassy valleys, these Thessalian refugees sped southward. Such string-like caravans may be seen to-day in any of the mountain-passes of Greece. The peasants who move from village to village, or who come from the mountains to visit relatives in towns, travel in such simple fashion. Whole families, possessing only a single beast, take turns in walking and riding.

With their children, and in some instances, with their flocks driven before them, the refugees first made a halt at Chalkis. There a large number determined to remain. Many hundreds, however, continued to wend their way through the Attic passes and over the fertile plains to Athens. To give these newcomers even shelter was no small undertaking, and for a very long time they lived on the bounty of others. Supplies of all sorts, as well as money, came from foreign countries, including America and England. Later, when the streams of benevolence began to run dry, an Athenian committee appointed to look after the refugees had to face the problem of

their maintenance, and it was wisely decided that these idle women must work. The difficult task of providing an industry which untrained labor could perform next confronted the ladies of the committee.

Every peasant woman knew, at least, how to spin. The distaff and the loom have been in constant use in Thessalian farm houses and huts from the time when Hesiod sang the delights of pastoral life. Antique customs maintained full sway in Greece until her war of independence in 1833, and outside Athens and Patras primitive conditions of life and labor still survive.

This inherited skill with needle and shuttle was turned to good account by the directors. Looms were quick-set up, and the Thessalian women took their accustomed seats behind the flying shuttles. The products were at first made into clothing for the women themselves and for their children. The supply of cottons, homespun, and coarse linens soon exceeded the demand. The ladies then extended the work to a weaving of the brilliant Greek carpets with which every well-to-do peasant's hut and farm house are supplied. Simple embroideries were next essayed, and these found a ready sale. And thus for several months the building generously lent for the work by a patriotic Greek gentleman was the scene of a contented and busy industry.

After peace came, the looms were

deserted. Long strings of mules and donkeys bearing women and children filed back to Thessaly. A few among the refugees elected to remain in windy Athens. These women formed the nucleus of the present flourishing royal school. Others among Athens' own poor eagerly sought the privilege of taking the seats left vacant, and soon proved to the lady directors that they were capable of more ambitious efforts. Their embroideries especially began to show innate, artistic capacity.

At this juncture Lady Egerton, a Russian by birth, the wife of the English minister at the court of King George, took an interest in the school, and for the benefit of the workers undertook a systematic study of classic designs, of lost or forgotten stitches, of antique lace, and of the modern art of lace-making. She went to Constantinople to study Byzantine models; she became an humble pupil of the school of lace-workers in Venice; she made the tour of the Greek islands to learn what secrets in designs and in colors had been transmitted, by long inherited skill, among the Greek women. In her Athenian drawing-room, as well as on the decks of crowded and cramped Greek steamers, Lady Egerton drew, stitched, read, or let her shining needles fly over the stuffed cushions whereon her lace lay. Hers was the unwearied energy of the true artist. Such enthusiasm worked the usual miracle. Everybody connected with the school became vitalized with new power and capacity. The ladies of the committee were found to be able seconds to such a leader.

The next step was to find a suitable home for the school. "If we are to have a true existence," the committee decided, "a future as well as a

present, we must be at home in a house of our own." Not only is it the dream of every Greek in European exile to go back to his loved country, to expend upon her the riches of his purse as well as the stores of his experience, but every foreigner living on Greek soil appears to feel himself to be a true son of that classic land. A French countess, belonging to an historic house, wearied of French republican "massacres" of all that, according to an aristocrat's ideals, made life endurable in France, had elected to adopt Greece as her country. She had brought her bibelots, her family portraits, her property, and her Hellenic enthusiasm to her Athenian home. This lady proved herself the second guardian angel of Lady Egerton's school. When the story of the needs of the school was told to her, some debate ensued as to the choice of a site, none whatever as to the ultimate question of its purchase. The present site in Michael Vada street, once fixed upon, was then and there paid for.

Royal interest and generosity completed what had been so generously begun through individual effort. King George himself provided for the building of the house. In some mysterious fashion the furniture "arrived." And thus at last in its own building, within its own grounds, this school of embroideries began its true artistic career. The interest shown by the king was soon extended to other members of the royal family. The queen and the Princesse Helene (the latter the Russian wife of Prince Nicolas, third son of King George) from the first had shown their sympathy with the project.

Few royal families in Europe have allied themselves so conspicuously

with the fortunes of the people they govern as has every member of the reigning house in Greece. Foreigners by birth though they are, the queen and her three daughters-in-law, the crown princess, Princess Helene, and Princess Alice prove by their persistent, untiring devotion their interest in the future of Greek women and Greek development.

A large part of this royal, as well as of the less conspicuous individual, enthusiasm arises from certain influences that appear to emanate from the Greek race. The magnetism of her great past is still a potent force to rouse her people to renewed activity. Greece, free, presents that most interesting of historical spectacles—a nation recreated, rejuvenated, with its old glorious instincts still alive and alert.

The designs produced at the school, embroidered silks, linens, cottons, or batistes, proclaim at a glance their classic origin. Many, indeed, were strangely familiar. Where had one seen yonder Byzantine design—those admirably conventionalized springing leopards? Surely never before

on coarse homespun shaped to cover a lady's boudoir pillow. Out of the quiet halls of statue-crowded museums, from the frieze of roofless temples, from glass-encased precious Greek vases, from the monuments of the Athenian Ceramicus, faintly, and then more and more clearly, came remembered shapes, forms, designs, traceries, and architectural ornamentations. On the linens and silks that lay stretched on wooden frames or that were held upon the stiff forefinger, hundreds of such forms, designs, traceries, and ornaments have been ingeniously adapted to as many modern purposes.

A lost artistic era seemed, in truth, to have been recaptured by these workers in silks and wools. Here in modern Athens, in a city as up-to-date as any American metropolis, as well equipped with trolleys, tram-cars, electricity, tall apartment houses, and with shops displaying the latest Parisian novelty, here was a group of directors and workers whose taste, ingenuity, skill, and cleverness were slowly and surely to influence European and American taste in design.

Beware of "By-and-By."

If you have hard work to do,

Do it now.

To-day the skies are clear and blue,

To-morrow clouds may come in view,

Yesterday is not for you ;

Do it now.

If you have a song to sing,

Sing it now.

Let the notes of gladness ring

Clear as song of bird in Spring,

Let every day some music bring ;

Sing it now.

A Humorist's Visit to the Pyramids

BY GEORGE ADE.

George Ade, the witty American, who is now touring the old world and writing up his experiences, gives a very amusing account of his visit to the pyramids in company with his traveling companion, Mr. Peasley. He touches off the place and the people very cleverly.

NOWADAYS visitors go out to the pyramids by tramcar.

For some reason we had the notion, doubtless shared by many who have not been there, that to get to the pyramids one simply rides through Cairo and out on the flat desert. As a matter of fact, the great pyramid at Ghizeh, its two smaller companions, and the Sphinx are on a rocky plateau five miles to the west of the city. There is a beeline road across the lowlands. It is a wide and graded thoroughfare, set with acacia trees, and as you ride out by trolley or carriage you look up at the pyramids, and when you are still three miles away they seem to be at least a half mile distant. At the end of the avenue and at the foot of the hill there is a hotel, and from this point one may climb or else charter a dumb animal.

Not knowing the ropes, we engaged a carriage at 100 piastres to take us from the city out to the plateau. This is not as much as it sounds, but it is about twice the usual rate. After we struck the long road leading across the valley, and saw the trolley cars gliding by and leaving us far behind, we decided to send the carriage back to the city and take to the trolley, where we would feel at home. The driver informed us that he could not return to the city, as the big bridge had been opened to permit the passing of boats, and that it would be three hours before he could drive back to town. It seems that he was right. The big bridge swings open but once

a day, and then it stays open for a few hours, and the man who finds himself "bridged" must either swim or engage a boat.

It is five minutes' climb from the end of the drive up to the rocky plateau on which the pyramids are perched, and the ordinary tourist goes afoot. But we were pining for oriental extravagance and new sensations, so we engaged camels. The camel allotted to me was destitute of hair, and when first discovered was in a comatose condition. His or her name was Zenobia, and the brunette in charge said that its age was either 6 or 60. It sounded more like "6," but the general appearance of the animal seemed to be back up the "60" theory. As we approached Zenobia opened one eye and took a hard look at the party, and then made a low wailing sound which doubtless meant "More trouble for me." The venerable animal creaked at every joint as it slowly rose into the air on the installment plan, a foot or two at a time.

We had come thousands of miles to see the pyramids, and for the next ten minutes we were so busy hanging on to those undulating ships of the desert that we overlooked even the big pyramid, which was spread out before us 750 feet wide and 450 feet high. Riding a camel is like sitting on a high trestle that is giving way at the joints and is about to collapse. The distance to the ground is probably ten feet, but you seem to be fifty feet in the air. As soon as we could escape from the

camels we walked around and gazed in solemn silence at the Sphinx and the three pyramids, and doubtless thought of all the things that were appropriate to the time and place.

Cheops was possibly the most successful contractor in history. It is estimated that he must have worked 100,000 men in the building of the great pyramid, as related by Herodotus, and that he must have devoted at least thirty years to the big undertaking. During all that time he never had a strike or even a clash with the walking delegates. The eight hour day was unknown, and no one dreamed of such a thing as an arbitration committee. All he had to do was to give orders, and the entire population obeyed him. Everybody worked but Cheops. He didn't even pay salaries. It is true that, in a spirit of generosity, he set out a free lunch for the laborers—about \$2,000,000 worth of garlic and onions. If he had tried to feed them on quail probably he would have gone broke.

The great pyramid of Cheops has been advertised so extensively that doubtless many people will be surprised to learn that there is a whole flock of pyramids on this plateau along the edge of the Libyan desert. There are pyramids to the north and pyramids to the south, five groups in all, sixty of them, and they vary in size from a stingy little mound looking like an extinct limekiln up to the behemoth specimen which is photographed by every Cook tourist.

Why do these pyramids vary so greatly in size? Each was built by some royal personage as an enduring monument to his administration and the last resting place of his remains. The most eminent students of Egyptology now agree that the size of each of these pyramids is a fair measure

of the length of each king's reign. The reason that Cheops has the biggest pyramid is that he held office longer than the others. When a king mounted the throne, if he was feeling rugged, and was what an insurance company would call a "preferred risk," he would block out the foundations of a pyramid tomb that would require say ten years for the building. If at the end of ten years he was still feeling in good physical condition, and confident of lasting awhile longer, he would widen the foundations and put on additional layers up to the summit. Labor was free and materials were cheap, and he kept everybody working on his tomb as long as he lived. Finally, when the court physicians began to warn him that his time was limited, he would begin putting on the outer coating of dressed stone and arrange for the inscriptions. The ruler who lasted only three or four years was buried in a squatty little pyramid, which soon became hidden under the drifting sands of the desert. Cheops kept piling up the huge blocks for thirty years, and that is why his pyramid holds the record. If Methusaleh had been a pyramid builder he would have been compelled to put up a tomb probably a mile and a half high and about eleven miles around the base. In a revolutionary South American republic the ruler probably would get no further than laying the corner stone.

We did not climb the pyramids. Mr. Peasley said he would postpone going up until they had inaugurated a lift service. The view from the top is said to be fine (see guidebook), but those who are boosted, and lugged, and hauled up over the angular blocks of stone are so exhausted when they arrive at the top that they cannot see anything. We decided to go

to the interior and look at the tomb chambers. An easy incline led up to a sort of grotto entrance, and we thought that going in to see these chambers would be something like strolling into a rathskeller. Let us quote Mr. Peasley's own words, that the reader may gain some idea of the horrible experience awaiting any one who undertakes the journey.

"Three men with bushy whiskers and white Mother Hubbards got hold of me and dragged me up to this hole in the rock," is the way he told it to a group at the dinner table. "I told 'em I didn't need any help, but they kept hold of me, and the next thing I knew we were in a rat hole as dark as pitch and hot as an oven, sliding right down to the centre of the earth. The man in front had hold of my leg, pulling me along; another one held me by the collar, and the third one kind of slid along with the rest of us and kept up a running conversation in some foreign language. After we had coasted about an eighth of a mile, as near as I could guess it off in the dark, we struck a large boulder, and I found myself locked in a miscellaneous embrace of the Arabs. Somebody lit a candle, and I found myself sitting on the edge of a dark hole that looked like the original bottomless pit. I never saw a hole that yawned more successfully. They hoisted me over this, and then we began to climb up through a long passage about the size of an ordinary smokestack. The rock had been worn as smooth as glass, I had to double up like a jackknife to keep from bumping my brains out. The man ahead dragged me, the one behind kept pushing, and the third one, somewhere in the rear, carried my hat and did the talking. I don't know how far we went, but it seemed about a quarter of a mile. Finally

we came to a landing. I fell on my face and said I had enough. The man with the candle turned me over, and all three squatted beside me, there in the deathlike gloom of that infernal hole, far from the police, and they wanted to know if I would give them a liberal tip when we got outside. I didn't know what they would do if I said 'No,' so I said 'Yes.' Then they said they were going to show me the queen's chamber. They grabbed me again, and this time we began to work our way through a passage that seemed to be just about as big as the inside of a stovepipe, fully as hot, and a good deal darker. I don't know how far they hauled me, but when they straightened me up I was in the famous queen's chamber. They said if I wanted to look at it they would burn a bit of magnesium, and it would cost only a shilling. They touched off the red light, and I found myself in a beautiful apartment which resembled the interior of a freight car. There was nothing more to be seen, so I folded myself up, and they pushed me through one subterranean passage after another, only in getting out I tobogganed most of the way instead of climbing. When it came to the last scramble, and I saw that little round hole of daylight ahead of me, I was so thankful—so used up—I handed over to those burglars all the money they asked, and then bought two imitation scarabs."

Mr. Peasley's account is not much of an exaggeration. We came out all mused up, winded, wringing with perspiration, and with a new and profound admiration for Cheops. It seems that he constructed the interior passages leading to the royal tomb chambers so that the vandals of coming generations could not possibly find their way in and steal the royal remains. Some of these passages are

less than three feet in diameter, and simply bored through the slippery rock at sharp grades, first up and then down. Of course, when Cheops planned these passages he did not count on the enterprise and the perseverance of the modern tourist. To get to these tomb chambers, which are buried in the subcenter of the huge mass of rock, calls for desperate and wearisome exertion, and after one arrives there is nothing to see except blank stone walls. But, as Mr. Peasley expressed it, "We don't want to go back home and not be able to say that we saw the whole works."

Overheated and groggy, we tottered downhill to the hotel, which stands near the end of the car line. It is a high class establishment, patronized by a sedate class of English travelers, and here we had no difficulty whatever in cooling off. It was one of those hotels at which no one speaks to anyone else, and gooseberry tarts are served for luncheon. Here, on the edge of the burning desert, it was so frigid and formal in the dining room that people had to put ice in their claret in order to reduce it to the temperature of the room. Even Mr. Peasley, who feels that to be cheery and conversational is a duty he owes to his fellow man, crawled back into his shell and lay quiet after two large, dowager looking ladies began looking holes in him with their lognnettes.

After luncheon we went out on the desert and warmed up again.

Most of the pleasure seekers that we encountered in the neighborhood of the pyramids seemed to be quite elderly—some of the more sprightly as young as 60, and from that going up to where it would be better to stop guessing. Mr. Peasley gave an explanation of their presence. He

said that the dry climate of Egypt would preserve antiquities for an indefinite period, but, of course, he was just in fun when he said that. The old folks really are entitled to a lot of credit for keeping on the move when they might be expected to rest on the shelf.

Here they were, these male and female octogenarians, not propped up in armchairs, dividing the family silverware and arranging bequests to hospitals and libraries, but out on the blinding desert, falling off donkeys, climbing up on camels, devouring guide books, rummaging around for timetables, kicking on the charges, and leading, on the whole, a life of purple strenuosity. We heard of two Englishwomen, sisters, both over 70, who had just returned from Khartum, from which point they had gone on a hunting expedition still further into the interior. They had to wear mosquito bags and semi-male attire, and were out in the wild country for days at a time, chasing gazelles, hyenas, and other indigenous fauna.

Just as I am about to conclude this treatise it occurs to me that, although I have given a wealth of useful information regarding the pyramids, I have overlooked our old friend the Sphinx. I can only say in passing that it looks exactly like the printed advertisements. There is no deception about it. It is in a bad state of repair, but this is not surprising when we consider its age. Herodotus does not mention the Sphinx. It was right there at the time. In fact, it had been there 1,400 years when he first arrived.

It seems strange that an observing traveler should have overlooked a monument sixty-six feet high, with a face nearly fourteen feet wide, a nose five feet and seven inches long, and wearing a smile that measures

over seven feet. Herodotus either walked by without seeing it, or else he did not think it worthy of men-

tion. The only plausible explanation is that he was too busy figuring up the garlie statistics.

Asquith, Chancellor of the Exchequer

CASSELL'S SATURDAY JOURNAL.

The recent introduction of the Budget in the British House of Commons naturally brings into prominence the Chancellor of the Exchequer, Mr. H. H. Asquith. Mr. Asquith has many brilliant qualities, which are touched on in the following brief character sketch.

BRILLIANT as a boy, Mr. Asquith is one of the most brilliant members of the House of Commons. He seems to have been absolutely cut out for a parliamentarian, for even as a lad, at the City of London School, he had a reputation as an excellent speaker. At school he cared little for outdoor games. Football editions were not then invented. Between playing footer and reading leading articles he chose the latter, as a rule, and there is an interesting story—a true one—to the effect that what constituted his chief joy were the opportunities that were afforded him for scanning, free of charge, the columns of the Times in the shop of a neighboring bookseller.

As a member of the Sixth Form Debating Society the future chancellor achieved exceptional distinction. So meritorious were his speeches that he actually captivated the headmaster. It was the custom of the "head" to preside at the meetings of the debating society, and while doing so to correct exercises utterly oblivious of what was taking place around him. As time went on, however, his attention became distracted. One, Henry Asquith, having fought his thorny way to the sixth, joined frequently in the debates, and his utterances were so remarkable that before long Dr. Abbott, the prin-

cipal, found himself, whenever the precocious Asquith essayed a flight of oratory, neglecting his exercises and following the speech as closely as he might have done had some issue of the highest importance to the state depended upon it.

Nor was Henry Asquith less successful as an orator at Oxford than he was at the City of London School. The talents he displayed as a member of the union were astonishing—so astonishing, indeed, that a man with a supply of brains limited in weight to a couple of ounces could have predicted a triumphant career for him. Nobody who listened to his oratory in these far-off days could have harbored any doubts as to the niche he was destined to occupy at the bar. As may be supposed, his political views were not the convictions of everyone, but there were no two opinions respecting his gifts as a speaker, his encyclopedic knowledge, and his powers of translating what was passing in his mind into suitable words.

It is the engaging occupation of many when a legislator has arrived almost at the top of the tree, as Mr. Asquith has done, to speculate as to the why and wherefore of his attainment of fame. In the case of the chancellor of the exchequer the task is not difficult. Mr. Asquith is con-

sidered, rightly or wrongly, to be of a rather cold nature: there is certainly no denying that he is never guilty of excesses. If you saw him in a transport of delight you might be excused for concluding that the earth was revolving in the wrong direction; he is not subject to sudden bursts of enthusiasm. He is cool and calculating, and follows, without deviating a single hair's breadth, the course which the compass of his intelligence tells him that he should follow.

Independent in thought and action, when he has marked out for himself a certain path he traverses that path until he reaches his goal. It is impossible to unsettle his convictions. More than this, he has still the splendid advantage of being able to say precisely what he wishes to say—an advantage with which comparatively few M.P.'s are endowed. He is never flurried to the extent of making a statement which he may have cause to regret. His brain is nimble, and he looks before he leaps.

The British public loves a sportsman, but Mr. Asquith has acquired popularity without even being mentioned constantly in the papers as a devotee of golf, although, as a matter of fact, he has fallen a prey to the game. His recreations are not numerous. There is a legend that on one occasion he experimented on the water-chute at Earl's Court in company with his friend Mr. Arthur Balfour, and that on the same evening he journeyed on the switchback railway, but his exploits in the open have been few and far between. This notwithstanding, however, he is one of the favorites of the House of Commons.

Mr. Asquith's capacity as a debater is unsurpassed. Mr. Balfour has furnished eloquent testimony as

to his abilities in this respect by avowing that he would rather any man in the House of Commons followed him in debate than the new chancellor of the exchequer. At the bar, of course, Mr. Asquith gained the highest honors. He enjoyed one of the most lucrative of practices, and when he first entered the ministry he must have sacrificed temporarily an income of at least £10,000 a year. It will be remembered that for a brief space he acted as home secretary.

As chancellor of the exchequer, Mr. Asquith has a most trying office to fill. It is his business to find the cash for the management of the Empire, and the carrying out of this function is an absolutely thankless ordeal. The chancellor must impose taxes; therefore he must incur a good deal of dislike. He cannot by any conceivable chance please everybody.

Before he has been a year at his post Mr. Asquith will be able to write a most amusing book, for there is no member of the ministry who receives such a mass of absurd correspondence as the man who has charge of the nation's money. He will be able to tell us of the great souls who have discovered novel means of raising the wind. The chancellor of the exchequer is literally bombarded with letters suggesting new kinds of taxes. Perambulators, rabbits, white mice, silk hats, tobacco pipes, cameras, mowing machines, bachelors, beards, cats—there is practically nothing on earth on which the chancellor of the exchequer has not been invited to levy a tax.

On the other hand, the chancellor is the recipient of hundreds of angry screeds protesting against this and that tax. Fortunately in this matter he is not in the least degree sensitive,

and—well, his waste-paper basket has a very big maw. The chancellor who endeavored to comfort everybody has not been born. Should such a paragon ever arise, he will ornament his department for about a week, when he will go the way of all flesh. But the present chancellor is confronted with no such end.

Mr. Asquith—his Christian names are Herbert Henry—was born at Morley, in Yorkshire, a little more than fifty-three years ago. He has been married twice, and his second wife was clever Miss Margaret Tennant, a millionaire's daughter, who is a bold rider to hounds.

The Interior of Newfoundland

BY J. G. MILLAIS IN THE GEOGRAPHICAL JOURNAL.

Africa, called only a few years ago the "dark continent," is to-day better known than the great island of Newfoundland lying so close to our doors. The interior of the island is a vast unexplored area with unnamed rivers, lakes and mountains. Only last year did the writer of this article discover the source of the second largest river in the island, the Gander.

IT is somewhat surprising that the interior of Newfoundland should be less known than parts of Central Africa or the Arctic Regions, and still more so when we consider that the island has been occupied by Englishmen since the days of Henry VII., and is our oldest colonial possession. But the reason for this lack of enterprise is not far to seek. A colony must, in the first place, be in possession of funds to send out properly equipped geographical expeditions to ascertain its natural features, and in this respect Newfoundland has been somewhat handicapped, but not to such an extent that there is any excuse for the lack of ambition to know their own country on the part of the various Newfoundland governments.

It was to fill up some of the gaps in the unwritten page, and to discover, if possible, the actual source of the Gander, the second largest river in Newfoundland, that I set out on my third expedition to the country in 1905. After a month spent in whale hunting, and in examining whales for a work on British mam-

mals on which I am engaged, I was met at Placentia on September 1 by my friend John McGaw. McGaw had previously studied geography and surveying, and had received considerable help in map-making from the Geographical Society, who seem always ready to assist their pupils, an unselfish duty which other scientific bodies might follow with advantage. I found him an admirable companion, a good shot, and an industrious worker at whatever subject he turned his hand. It made our duties light and pleasant, for whilst he surveyed one line of country I could attend to another, and in the evening we joined forces and made our map together.

Dense fog enclosed the whole of the south coast; but when we arrived, after two days in a steamer and one in a schooner, at our starting-place on the banks of a small river at the head of Despair Bay, the sun shone out brilliantly, and for a month and more we enjoyed the most delightful weather, the average temperature being very much the same as Scotland, although somewhat colder at night. Starting on September 3, and accom-

panied by six packers, exclusive of our own four helpers, we journeyed across a small range of hills to the large lake known as Long Pond, a distance of six miles from the head of Despair Bay. Here the packers left us to our own devices, and we traveled across Long Pond two miles, and up the East Bay river to Souli's Ann pond, another large lake, where, bad weather coming on, we were detained for a day and a half.

To the east of Souli's Ann pond the whole country is sparsely wooded, except round the lakes and rivers, where the timber is more dense. The trees consist of white pine, red spruce, black spruce, larch, white and black birch, poplars (hops), maple, mountain ash (dogwood), choke cherry, small wild cherry, hazel, and alder.

The "open ground" or "country" is covered with "Indian tea" bush, goudie, a lovely flowering shrub, and dwarf spruce, creeping birch, and juniper. On the ground are various mosses, notably the common reindeer moss, and a large number of berries, cloudberry, cranberry, partridge-berry, bearberry, a favorite food of the Canada goose, whilst blueberries grow in vast quantities wherever the forest has been recently burnt.

Immediately round Souli's Ann pond the whole country is "burnt," and the melancholy area of destruction extends as far as the eye can reach to the east and west. This great gaunt sea of grey poles is now interspersed with young and growing timber of various kinds, some of it ten and fifteen feet high, and affords good cover for game, and in the course of twenty years the country will again recover itself to a certain extent. It takes about eighty years for a forest to grow.

On September 7, in beautiful

weather, we paddled up Brazil's pond, and at noon entered the short section of the East bay that connects this lake with Little Burnt pond, which is 650 feet above sea level. Here we found walking and frequent portages necessary, owing to the difficult and rocky character of the stream. It was in such places that our Indian guide, Joe Jeddore, exhibited his great skill as a canoe man. Standing up in the light 16-foot basswood boat, he poled through rapids and past rocks where the less accomplished white men had to toil in the water emersed to their waists. The slippery character of the bed, too, created occasional disaster, and more than once we saw our faithful but somewhat clumsy followers disappear in the shallow torrent. But all discomfort was undergone by the Newfoundlanders with that cheerful stoicism which marks them as the hardy and good-natured race which they undoubtedly are.

In darkness we reached Round pond, the largest sheet of water in Central Newfoundland, and camped there for the night. Looking across the glassy waters away to the north-east, we could see the peak of Mount Bradshaw (called after one of Alex. Murray's able assistants) towering up above the green timber, and the only landmark visible. Round pond is another somewhat dangerous sheet of water to circumvent in small canoes, so we had to be careful next morning, as a good breeze was blowing astern as we headed northwards. At nine o'clock the Indian spied a large caribou stag about a mile ahead, and after a long and hard paddle I headed the beast and shot him at 150 yards. Meat being an essential compensation for hard work in the wilds, we were all delighted at this piece of good fortune, and continued our

journey in high spirits to the north end of the lake, where a brook comes in from the north-west from a small pond called by the Indians Godoleick, or Spring-water pond. Here were noticed several good outcrops of pure petroleum oil, which made long green streaks on the shores of the lake. Something might be made of these, as well as the abundant chrome-iron deposits which we afterwards saw near Mount Cormack, were transport not so difficult. At noon we continued westwards up steady water for one and a half miles, and then entered a small pond of about three-quarters of a mile long, which we called Great Northern Diver pond, from the abundance of these fine birds which are to be found there. Continuing up stream, we reached another unmarked pond of about a mile long, which might appropriately be named Shoal pond from its extreme shallowness.

This being a good point from which to strike east over the unknown country at the headquarters of the Gander, I decided to cache the greater part of our stores on an island, where bears could not get at them, and to proceed northwards on the following day on a flying visit of a week's duration to Lakes Pipestone and Sit-down, Mount Cormack and its environs. Next day accordingly we traveled light with three canoes, and after spending a day in surveying the country to the east and marking the position of Look-out hill (850 feet), we continued up stream for two days, reaching Pipestone on the evening of September 13. From Dead Man's rapids, a rough series of broken waters, the river was exceedingly difficult, and the men in constant trouble with the canoes, and at the rapids a portage of half a mile was found necessary.

Pipestone we found to be very unlike its aspect on the map. It lies almost due north and south, and is equally divided into two sections, each about one and a half miles long, and divided by a narrow bar of stones some ten yards wide. The country was flat, burnt, and exceedingly melancholy, with its great sea of burnt poles.

When it rains in Newfoundland, the heavens seem to open and let loose the water, not in buckets, but in ponds, and a day of this saw us, like drowned rats, retreating to Shoal pond, where we had left our stores. The following morning we made a start up the brook which leads to Dog pond. The heavy rain of the previous day had been of great assistance to us, for we found that the small stream up which we had calculated to pack was negotiable by canoes if carefully handled. We made about five miles that day, and in the evening found ourselves on a small lake, which is named Little Dog pond, where we had the good fortune to pick up a couple of wild Indian boys named Matthews, who were hunting caribou. After some parley, they agreed to come with us for a week or ten days, and to help us over the difficult country between Dog pond and the Gander. The next day we made Dog pond, where I killed a caribou doe, as we were quite out of fresh meat, and paddled to the north-east corner of the lake, where we camped for the night.

This point is close to the watershed of the two great river systems of Newfoundland. We could not, therefore, rely on water to help us for any distance on our eastward journey, except by using for a short spell the three small lakes that were said to exist between Dog pond and Burnt hill, a mountain overlooking the

Gander at a point where I hoped to again float the canoes. On the map this distance may be roughly estimated at 20 miles, but as the packers had to go the distance proved to be over 30 miles, whilst on foot and skirting the mountains to the south. McGaw and I found that we had walked nearly 40 miles.

After disposing of the stores and taking such things as would be necessary for myself and my companion for eight days, McGaw and I, with three Indians and Robert Saunders, set out on foot for the Gander river, intending to camp in a good hunting country that I had discovered in 1903. My plan was to shoot, if possible, two or three stags on the way and in the route of the oncoming packers, and thus supply them with fresh meat during their arduous undertaking. This we succeeded in doing at suitable intervals of distance, and accomplished the march in three days, going hard all the time.

Soon after leaving Dog pond on September 17, we found that which we had most earnestly desired, namely, a stream flowing eastwards into the first of the lakes, which I took the liberty of naming McGaw's lake, after my industrious companion. By following this small brook back to its source, we can claim to have discovered the source of the Gander, the second largest river in Newfoundland, for the water system continues through the small lake chain to the eastward, and may be said to be a continuation of the main river, which had only been surveyed (by Howley) as far as Burnt hill. The actual source of the Gander comes from a small still pool surrounded by stunted spruces.

To the south of Lake McGaw we ascended to the summit of Partridge-berry hill, the highest mountain in

Central Newfoundland, and obtained a magnificent view in all directions. The air was so rarefied that it was possible to make out Mount Peyton, or Blue hill, as it is called by the Indians, 70 miles away to the east. To the north Mount Lawrence and Joe Migwell's hill stood out by themselves. The great valley of the Gander lay at our feet, and we could trace its sinuous course for 20 miles from its source, through the lakes of McGaw and Rocky pond, to the widening "Steadies," beneath Burnt hill, eight miles to the east, where it was lost in the green woods. All around us were rocky barrens and small marshes, across which countless caribou trails led away to the south, for this is a great migration route of the deer when they begin to travel. We continued all day eastwards, reaching Burnt hill at sunset. Beneath the mountain we flung ourselves wearily on the ground amongst the abundant blueberries, and thought of camping, when one of the Indians saw a stag right on the top of Burnt hill. Joe released from his pack was like a greyhound loosed from the slip, and the way he led me up that mountain after a 20-mile walk I shall not easily forget. However, I slew the stag, and we returned to the small woods, where we found McGaw had made a comfortable camp. The next day, September 18, we continued our journey over hard ground, and at midday McGaw killed his first stag, in a position that it could be easily utilized by our packers. That night we made the edge of the green timber and camped close to a splendid beaver colony, whose occupants seemed to recognize the fact that they were protected, for they stared at their visitors with no unfriendly eyes.

The next day we journeyed down the ever-widening river, and at mid-

day I killed another stag, and in the evening we reached the spot which had been my highest camp in 1903.

On the following day the Indians and Bob left us to our own devices, and returned to meet and help the packers, whilst McGaw and I hunted on the Gander for five days, and awaited the coming of the packers. During this period we killed three nice heads. On the night of the 24th the men turned up with the outfit. They had met with no accidents, but had experienced an arduous journey for eight days since leaving Dog pond. The river itself had proved

nothing but a series of shallows and rocky benches, in which it was unsafe to drag the canoes, so that the men had been forced to pack nearly the whole distance. The three stags had been of great comfort to them. They had devoured the whole of the edible parts, and this had given strength to do the work.

As my friend McGaw had only one more stag to kill under the terms of his license, and was also anxious to catch an early steamer for home, he left me on September 25, and, traveling down the swollen Gander, reached Glenwood on October 2.

Close Shaves in Insurance

NEW YORK EVENING POST.

Many stories might be told of remarkable instances in which insurance claims have been paid, when, under ordinary circumstances, the beneficiaries could have no hold on the insurance company and vice versa. A few strange cases are given here.

THERE is a lot of luck, hard and otherwise, in the insurance business. If any one doubts it, let him listen to the stories that accumulate in the claims department of any of the big companies. If there is a good talker in the place and one who is not afraid of losing his job, enough yarns of fortune's caprices will be unfolded in five minutes to fill a book.

The public does not hear more than one in a hundred of the romances that lie behind the scenes. Occasionally an item, such as the one concerning the westerner who recently tried to die in time to save his insurance for his family, and was thwarted by a doctor's keeping him alive a day too long, creeps into the newspapers. But every day in the year the claims department hears of equally interesting cases that never become gener-

ally known. Though no records of the strange incidents are kept, the average clerk in the department, if he has any memory at all, can recall them by scores.

"Sometimes the luck is on the side of the policyholder's heirs, sometimes it favors the company," commented an officer of one of the "Big Three" this week. "But in a big percentage of cases there is an element of chance somewhere. One man dies just too soon, another just too late; one is fortunate to insure himself a few hours before he meets with an accident, another leaves his family penniless by dying after a sickness during which his policy has lapsed. So it goes on, year after year."

Not long ago a policyholder of a New York company died in the south. Two days after his death there was found in his check book a check

drawn to the order of the company, intended to pay the premium that fell due before the man passed away. The family notified the company of the facts. At first the officers thought that the claim was invalid, but after some consideration they decided to pay it.

"We agreed," explained one of them, "that the courts, if the case was contested, would hold that the policyholder's evident intention to pay the premium constituted a legal payment. He drew the check and died before he could forward it."

Many cases similar to this one are recalled. One was that of a New Jersey man, who died a few months since. After his death, which occurred on the day his premium was due, a letter addressed to the insurance company was found on his desk, and somebody mailed it. The company, in this instance, declined to pay the claim, and a suit was begun. The letter contained a check signed by the policyholder. As yet the courts have not passed on the suit, but offhand it would appear that the merits of the case are the same as were cited in connection with the previously mentioned check.

Only last week a remarkable case came to the attention of the local companies. The lawyer for the estate of a wealthy Texan came to New York and told this story:

"My client was a member of a family which for years had been involved in a feud with another family. It happened that he met one of his enemies, and they blazed away at each other. My client was shot dead. Then it developed that he was insured for \$150,000, the policies being distributed among several companies. The New York companies, after investigating, paid the claims without going into court, but a Pennsylvania

concern declined to meet its obligation.

"Now, what do you suppose were the grounds for the refusal? In the first place, it was asserted that the policyholder was 'over-insured,' which means that he was accused of having concealed from the Pennsylvania company's agent the amount of insurance already carried by him. The company, in defending itself in the suit instituted by the beneficiary, declared that it wouldn't have issued his policy if it had known the extent of the policies carried elsewhere. In the second place—would you believe it?—the company contended that he had committed suicide by allowing himself to be shot!"

The lawyer, who had come north to attend to the suit, said he felt sure of winning it.

"But," he added, "one never can tell, and all the insurance companies employ first-class legal talent regularly. They make it a practice to contest every claim they have any chance to dodge."

An almost unbelievable instance of good luck that befell the family of a laborer in the Bronx was related to the writer on such good authority that it may be taken as accurate, however incredible it appears on its face. The laborer, whose daily work kept him moving along the waterfront, applied for a policy in a western company. The local agent, naturally anxious to secure his commission, made haste to send the applicant to a physician who served the company regularly as an examiner. For some reason the doctor could not make the examination at once, but he talked to the workingman, and made an indefinite engagement to meet him later. Two or three days afterward, by mere accident, the physician met a brother practitioner, an old friend, and in

some way learned that he was the family doctor of the laborer.

"Well," remarked the examiner, "you can save me a lot of trouble. I have agreed to examine him for an insurance policy. Suppose you tell me whether he's all right or not."

The friend assured him that the applicant was in fine health and in every way qualified to be accepted by the insurance company. Thereupon the examiner filled out the required blank, approving the workingman's application, and forwarded it to the agent, dating it back two days. The agent forthwith sent the certificate to the company, requesting that the policy be sent to New York in the regular course of business. The premium, in accordance with the agent's agreement with the company, was to be paid in at the end of the month, along with other sums due.

Meanwhile the applicant fell off a pier and was drowned—a whole day before the doctor signed the certificate. But neither doctor nor agent heard of his death for days afterward. The company, when notified thereof, actually paid the insurance, and to this day only those who have heard the story from the physician, who was incautious enough to tell it to several acquaintances, are in possession of the true facts.

While the companies are always on the lookout for frauds, there is no doubt they are victimized frequently. During the recent insurance scandals a notorious case without legal proof sufficient to warrant its publication, was the subject of widespread gossip down town. It was said that an officer of an insurance company, after learning that he was afflicted with a disease likely to cause his death at an early date, took out a policy for an enormous sum. He had no trouble in passing the medical examination.

Furthermore, he got a rebate, which amounted to the major portion of the first premium. Then he died—before the second premium was due. The company, for various reasons, including the fact that it could not make a contest without arousing additional scandals, paid the claim quickly. It had received practically nothing for the risk, but the officer's widow was "fixed comfortably" for the balance of her days.

That was luck—for her. Nor, according to well-informed persons, was the case an unusual one except in regard to the size of the amount of the policy. It is known to be a fact that unscrupulous agents, acting in collusion with the insured or the beneficiaries, have caused policies to be issued on lives that were thoroughly bad risks, securing their large commissions, giving handsome rebates, and, finally, in some cases, sharing in a division of the sum paid after the policyholder's early death.

The stories of payments to the beneficiaries of suicides are varied and often full of interest. Most of the companies, in recent years, have inserted in all their policies, a "suicide clause." The stipulation generally is that the policyholder's beneficiary will get nothing if suicide is committed within a year, or within two years. This prevents the deliberate taking out of policies by persons who have already decided to end their lives. There is one company, however, which takes no account of suicide. If anybody gets a policy and then kills himself, his family ordinarily collects the insurance.

Yet this very company now is contesting in the courts the claim of the heirs of a western bank defaulter who ended his life immediately after obtaining a policy for a large sum. The ground on which the contest is

being made is that there was a carefully planned intention to defraud the company, and that equity prevents any one from having the right to cheat the company, even though it does not insist upon a "suicide clause."

Innumerable cases of policies paid to the beneficiaries of persons dying during a "period of grace" have been reported. Each of the larger

companies grants thirty days' during which a man may pay his premium on certain classes of policies after it falls due, charging him interest at 6 per cent. on the money during the time elapsing after the day he should pay. If he fails to pay up in the thirty days, he may be restored to his rights in the policy only by undergoing a new physical examination.

The Highest Railways in the World

BY EUGENE PARSONS IN WORLD TO-DAY.

The skill of engineers who have carried railroads across apparently impassable mountain ranges is matter of wonder. Sometimes the feat seems impossible, and yet the mountain roads of to-day are an evidence of what these tireless workers have accomplished.

WHEN the Union Pacific Railroad was built, in the sixties, the construction engineer, General G. M. Dodge, found it clear sailing until he came to the Rockies. Years before, when fighting Indians, he had by accident discovered the pass, about thirty miles west of Cheyenne, named in honor of General W. T. Sherman. Here the road was constructed. The altitude of Sherman Hill, then the loftiest point reached by any railway, was 8,235 feet above sea level. By a stupendous engineering achievement a tunnel, 1,800 feet long, was afterward bored through the hard granite, making the new crossing over Sherman Hill 235 feet lower than the old one. It is now just 8,000 feet above sea level. In the Continental Divide the engineers were baffled, and the noted Rocky Mountain guide, Jim Bridger, was called upon to point out a way over the crest of the Rockies. His familiarity with emigrant trails enabled him to map out a route where there is a natural depression in the mountain chain.

The Union Pacific crossed the Divide at an altitude of 7,100 feet.

At the time of its completion, in 1869, this was the highest railway in the world, but since that time much higher roads have been built in the Rockies, in the Andes and in the Alps. Two years later the Denver and Rio Grande Company was at work, "rifting the hills" and laying tracks. The task of conquering the mountain ranges had now begun, good and earnest.

The Rocky Mountain range in Colorado is literally humped like a camel. Nowhere else on this continent, except in Alaska and Mexico, are there so high peaks as Mount Massive and Sierra Blanca. The trans-continental lines to the south and north found passes in New Mexico. Montana and other western states varying from seven thousand to nine thousand feet above sea level, and the loftiest stations in the Sierras are no higher. In Colorado the railways reach many points above the clouds: Silver Plume (9,176 feet), La Veta

Pass (9,242), Cumbres Summit (10,015), Lizard Head Pass (10,250), Hoosier Pass (10,360), Marshall Pass (10,856), Hagerman Pass (10,944), Fremont Pass (11,330), Alpine Pass (11,560), Rollins Pass (11,660), and Pike's Peak (14,127).

It is no easy matter to build mountain railways. The expenditures for bridges, trestles, tunnels, loops, etc., are simply enormous. The highest railroads cost "like fury," and oftentimes have engineering difficulties been encountered that taxed the ingenuity of construction engineers to the utmost. A well-known case in point is the famed Georgetown Loop, on the Colorado and Southern. As a railroad can rise only a certain number of feet in a mile, the line of track circles about in a "serpentine trail," gradually rising higher and higher between Georgetown and Silver Plume. To make the ascent of seven hundred feet and a distance of only one mile by wagon road, the train climbs around and around four and one-tenth miles of rail, crossing Clear Creek eighteen times. The track on the high bridge is seventy-five feet above the track under the bridge. The steepest grade is 195 feet to the mile. The loop cost from \$40,000 to \$50,000 a mile. At Alpine Pass, where the Southern surmounts the dome of the continent at an altitude of 11,560 feet, the cost of a mile or two of track was about \$50,000 per mile. The average expenditure of some thirty miles or more of the new "Moffat Road" has been estimated at \$125,000 a mile. Owing to the construction difficulties met in the Animas Canon, the outlay for a mile of track north of Rockford aggregated about \$140,000.

The Rio Grande crosses and recrosses the Continental Divide, making grades of 211 feet to the mile.

From Antonito to Chama the track winds around the mountains, doubling upon itself, until it makes a distance of sixty-four miles. The air line between these two points is about thirty-five miles. Instead of curving around a mountain summit, it is sometimes better to tunnel through it and make a short cut to the other side. Thus Toltec Tunnel was driven through the granite for a distance of nearly a quarter of a mile. So solid is the rock that no props are needed to uphold the mass above. As the train rolls out of the tunnel, it passes directly upon a bridge set in the wall of stone, and this firm balcony of masonry is all that keeps the passenger coaches from falling fifteen hundred feet. Another instance of marvelous engineering skill is the hanging bridge in Royal Gorge, where the canon is too narrow for both road and river. By means of huge iron braces fastened to the walls of the chasm (fifty feet wide at this point) an iron bridge is held in suspension, and huge iron bars, depending therefrom, hold the track in place at the base of a cliff 2,600 feet high. Through the Black Canon of the Gunnison River the road is built for miles on a shelf blasted out of the rocky wall.

A daring piece of work was the building of the first mile north of Rockwood in the Animas Canon. The wall in this defile of natural masonry was smooth and vertical for almost a thousand feet from its base. "From that height were seen hanging spider-web-like ropes, down which men, seeming not much larger than ants, were slowly descending, while others, perched upon narrow shelves in the face of the cliff, or in trifling niches from which their only egress was by dangling ropes, sighted through their theodolites from one ledge to the other, and directed where to place the

dabs of paint indicating the intended roadbed. Similarly suspended, the workmen followed the engineers, drilling holes for blasting, and tumbling down loose fragments, until they had won a foothold for working in a less extraordinary manner. Ten months of steady labor were spent on this canon-cutting, months of work on the brink of yawning abysses and in the midst of falling rocks, yet not one serious accident occurred. 'Often it seemed as though another hair's breadth or a straw's weight would have sent me headlong over the edge,' said the chief engineer." The shelf for the roadbed was thus made, midway between the top and bottom of the red granite precipice, about five hundred feet above the river.

The Ophir Loop, in the San Miguel Mountains, is an intricate maze of meandering lines and abrupt curves. Up the ascent of Marshall Pass, in the picturesque backbone of the continent, the train, with two powerful engines attached, climbs grades of 211 feet to the mile until the ridge of the Saguache Range is attained, 10,856 feet above sea level. Here the traveler gets a remarkable view of majestic mountains in all directions. To the west is the Pacific slope, and to the east is the Atlantic in the valley of the Arkansas.

Hagerman Pass, on the Midland, reaches a still higher point, its altitude being nearly eleven thousand feet, and it affords a magnificent panorama of the Rockies. To the east, between Hagerman and Leadville, is Busk Tunnel, two miles long, cut two thousand feet below the mountain top. A little to the north is Hell Gate, which presented almost insuperable obstacles to the construction engineer, Mr. B. H. Bryant. With the utmost difficulty the material was transported, on the backs of burros,

up the steep mountain trails. Men were lashed over the brows of cliffs two thousand feet high, and there, dangling like painters near the roof of a skyscraper, they blasted a roadbed out of the rocky front of the chasm. In Hell Gate Loop the train goes around fourteen miles to make a descent of only half a mile. The steep grades require three heavy locomotives to haul freight trains.

The Colorado Springs and Cripple Creek District Railway, usually called the Short Line, stands in a class by itself. It was purposely constructed on high mountain slopes, rather than in valleys and ravines, in order to obtain the largest number of scenic attractions. On the Short Line the traveler looks down into Cheyenne Canon and other gorges, or gazes across stretches of country with wondrous heights and depths in all directions.

Some details of the construction of this railway may give the reader an idea of the difficulty of mountain railroad building. For a large part of the way the roadbed was cut out of the granite on the east and south sides of Pike's Peak. The track is forty-five miles long, while the air line between Colorado Springs and Cripple Creek is nineteen miles. The bends and windings back and forth make up the extra distance. There are spiral curves and horseshoe curves by the score, spanning the gorges and twisting around the mountains. One of the most difficult pieces of engineering on the line was between Duffield and St. Peter's Dome, three miles of track being laid to gain a distance of 1,600 feet and an elevation of 540 feet.

From Fountain Creek near Manitou the road follows the Frontal Range of the Rocky Mountains to Summit, a distance of nine miles by air line,

with an elevation of 3,960 feet. Because of the rugged and precipitous character of the country, the construction engineer, Mr. T. L. Wagner, found it necessary to develop twenty-one miles of line between the two points nine miles apart. The maximum grade used is nearly four per cent. He ran about one hundred miles of preliminary lines in locating the best line for the route. Less difficulty was encountered in the undulating surface of the western half of the line. Nine tunnels were bored through granite and hard rock formations, the longest tunnel being 532 feet. In building the roadbed, immense masses of rock slid down the mountain side upon it, greatly obstructing the work. The highest point on the line is Hoosier Pass, 10,360 feet, which commands a magnificent panorama of mountains and valleys. The two-and-a-half hours' ride over this high railway affords the traveler a series of views of unexcelled beauty and sublimity.

The present year, 1906, will see built through the Rockies a railroad that is said to be the highest in North America, the Denver, Northwestern and Pacific. It has been financed by David H. Moffat and is generally called "the Moffat Road." It makes a short cut from Denver to Salt Lake City, traversing Middle Park and northwestern Colorado. In the mountains the roadbed is hewn from the rock a great deal of the way, and in the distance of thirty-five miles are twenty-nine tunnels. Sixty-six miles west of Denver trains pass through a tunnel 2.6 miles long, at an altitude of 9,930 feet. In other places huge snow sheds serve to protect the track, so that traffic is not greatly interrupted in Winter. The road crosses the Divide at an elevation said to be 11,660 feet, the highest point reached

by a standard gauge railroad in this country. It passes through some of the grandest scenery in the world.

The fame of Pike's Peak has gone to the ends of the earth, and associated with its greatness is the Cog Wheel Route, by which name the Manitou and Pike's Peak Railway is best known. It was built in 1889-90 to enable the tenderfoot to scale the Peak without the fatigue of climbing up the trail. It is nine miles long, and in this distance it overcomes an elevation of 7,498 feet. It leaves Manitou at an altitude of 6,629 feet and gains the summit at 14,127 feet. In the middle of the track are the two Abt rack rails forming a ladder of notched teeth to which the cog-wheel clings. These rails are made of the best Bessemer steel and are eighty inches long. The roadbed, from fifteen to twenty-two feet wide, is for the most part of solid rock, and the track is firmly anchored. The track is standard gauge, like that on Mount Washington. The locomotive pushes the car up and precedes it going down. Every precaution is taken to insure the safety of passengers.

An undertaking similar to the Pike's Peak line, though more difficult in some respects, is the building of the railway to the summit of the celebrated Jungfrau Mountain in Switzerland. The road is not yet completed.

Another Swiss electric road, now in operation, starts from Zermatt, 5,315 feet above sea level, and makes a run of five and a half miles, in sight of the Matterhorn and many Alpine glaciers, to Gornergratz, 9,910 feet. While this is the highest road in service in Europe, the electric road of Cripple Creek attains a point on Pike's Peak a quarter of a mile higher, and the new cableway on the Argentine Northern Railroad makes a

height of 14,933 feet. This cableway spans chasms in the Andes that are six hundred feet wide; it is said to be the longest in the world, having a cable rope eighty-seven miles long. It has the highest engine station in the world, occupying a site nearly a quarter of a mile higher than the pinnacle of the Jungfrau.

The short roads mentioned, on Pike's Peak and in Switzerland, are hardly to be called railways, they are simply tourist lines. The highest steam railroad of Europe is the Albula-Engadine line, opened in 1903. It may be termed a link in a system of railways that will, a few years hence, connect Switzerland with Germany and Italy. The Albula runs in a southerly direction, following the windings of the Albula River, a tributary of the Rhine. It is in the southwest canton of Switzerland and traverses several valleys, of which Engadine is the largest and most beautiful. The road passes through numerous tunnels, one being 19,246 feet long. At the highest points it attains an altitude of 5,980 feet.

The length of the Albula Railway is thirty-nine miles. The lower terminus is Thusis, and the upper end is Saint Moritz. By an air line the distance is about twenty miles, which is nearly doubled because of the loops and curves of the track on the mountain slopes. The steeper grades are from two and one-half to three and one-half per cent. In the thirty-nine miles it overcomes a rise of nearly three thousand five hundred feet, the altitude of Thusis being 2,550 feet and that of Saint Moritz 5,980 feet. The latter, the highest point reached by a steam railway in Europe, is actually lower than Colorado Springs. The building of bridges, viaducts, galleries, tunnels, etc., made this an expensive enterprise. The ride takes the tour-

ist through regions of romantic interest and enchanting loveliness, surpassed nowhere else in the world.

The Darjeeling-Himalayan Railway in India has some pretty steep grades. Its highest station has an elevation of 2,266 meters, nearly seven thousand seven hundred feet, which would not be considered lofty in Colorado. The road winds and reverses along the mountain sides amid tropical trees and in sight of tea plantations on spurs and terraces. It passes through a land infested by tigers, leopards, and wild elephants. Darjeeling is situated on a saddle of a ridge in the Himalayas, whose tallest peaks are twice as high as the Rockies. The track has a two-foot gauge, and the heaviest grade is 5 per cent. The cars are small affairs, five and one-half feet by nine, and five feet eight inches high, with seats for six persons. The run of fifty-one miles is made in six hours.

Peru has the highest railway in the world, the Oroya, which runs from Callao on the coast across the Maritime and Central Cordilleras of the Andes to Oroya, a distance of 136 miles. The road starts at sea level and passes through the tropical valley of Rimac, then through the fruit belt, and, higher up, over spots where grass and potatoes grow, till it strikes the snow fields destitute of vegetation. It is steady up-grade all the way to the tunnel, seventy-eight miles, the road rising some five thousand feet in the first forty-six miles of the ascent. The Galera Tunnel penetrates the mountain at the highest point reached by any railroad, 15,645 feet, or nearly three miles high. Thence a swift descent is made to Oroya, situated in a valley at an altitude of 12,178 feet. The distance from Callao to the tunnel is covered in eight hours, and in this short time

the traveler experiences a succession of climates, warm and cold—all the contrasts of the tropic and frigid zones.

This wonderful road was begun in 1870 and completed in 1876, at a cost said to be more than \$21,000,000, or about \$160,000, in silver, to the mile. It is called "the greatest feat of railroad engineering in either hemisphere." There are sixty-three tunnels and some enormous embankments. The Verrugas bridge spans a chasm of 580 feet. An army of workmen were employed, the number reaching no less than 8,000 at one time. In the six years of the building of the road more than 7,000 of the

workers died or were killed. Landslides and loosened boulders added to the list of the fatalities and accidents. Owing to the physical privations and hardships and the difficulty of breathing at high altitudes, it was necessary to maintain a hospital for the sick and wounded. Verrugas, a disease peculiar to that locality, carried off many victims. It is characterized by a species of warts breaking out all over the body and bleeding. So great were the obstacles, the wonder is that the construction of the Oroya Railway was carried through to successful completion. The wonders of the ancient world, except perhaps the Pyramids, dwindle in comparison with this stupendous undertaking.

Is Mars Inhabited?

BY WALDEMAR KAEMPFERT IN MUNSEY'S MAGAZINE.

This question, which has exercised the minds of astronomers and scientists for many years, has a fascination of its own that few problems possess. The writer of the following paper explains clearly just how far scientific research has progressed. He places the case for the affirmative in a strong light and almost makes us believe.

WE may measure the abyss that separates us from Mars to a mile; but the accomplishment of the task would result merely in an array of disheartening millions. We may trace the planet's eccentric path; but the feat would end only in the plotting of bewildering curves. We may pass a mathematical tape around its girth, cast its mass into scales, and chemically analyze the substances of which it is composed; but the problem thus presented would involve no more human interest than the measuring, weighing, and analyzing of a stone. But one supremely vital question can interest the average thinking man and woman; and that question is—have we any trust-

worthy evidence that Mars is an inhabited world?

In the first place, we must determine whether the conditions necessary to the maintenance of life are present on Mars. If so, we have the right to seek for signs of beings intelligent as ourselves. Terrestrial experience has taught us that life is dependent on two essentials, and that of these essentials the one is air and the other water. What we call life is but a constant succession of chemical changes wrought by both.

Not even the most carping astronomical sceptic will deny that Mars has an atmosphere composed of gases similar to those which envelop our Earth. Nor will the most san-

guine believer in a race of Martians deny that the atmosphere in question is so thin and so rare that we of this world could not breathe it for any great length of time and live. To dwell in a balloon far above the Himalayas would be the atmospheric equivalent of a residence on Mars, so far as we are concerned. And yet it must not be forgotten that our organisms have been designed for the needs of this Earth alone, and that tenuity of air is no conclusive argument against life adapted to the peculiar conditions of another orb.

Seldom is that subtle atmosphere of Mars disturbed by a storm. There is no need of a weather bureau, no need of rash predictions of the morrow's rains or snows by Government officials, for the simple reason that Mars has no weather. The passing of a cloud would be a historical event. The weather is always fine; the sun always shines. In all likelihood the atmosphere is charged with watery vapors, precipitated, perhaps, in the form of dew, but very infrequently in the form of rain. Most probably, too, these watery vapors form a transparent jacket which prevents excessive radiation of heat; for only by this supposition is it possible to account for conditions utterly at variance with those that ought theoretically to prevail. In other words, because it is situated from the sun at a distance that varies from one hundred and twenty-nine to one hundred and fifty-four millions of miles, Mars ought to be a cheerless globe of perpetual ice; yet we know that its actual temperature is not very much lower than that of our Earth.

That water, the second essential of life, is not absent on Mars, we have abundant proof in the regular melting and re-formation of polar caps, composed probably of snow or hoar frost.

Indeed, by far the most obvious changes which occur on the planet are the gradual increase and decrease of the white expanses at the poles. Two hundred years of observation have made us so familiar with these expanses that we know more about them than we do about our own arctic and antarctic zones.

In order to justify the inference that the gradual disappearance of the polar caps with the advent of spring and summer is due to melting of snow, and not to the evaporation of some solidified gas, Professor Percival Lowell directs attention to strange, dark bands which invariably girdle the outer edges of the white areas, which retreat with them to the poles, and which finally vanish with the last white specks. From this he shows that they cannot be composed of carbonic acid, and that the only substance which could appear as they do is water. The bands are blue—the color of water. And that they are water, Professor William H. Pickering, of Harvard, has neatly demonstrated by a physical examination of the light which they reflect. Here we have open polar seas, lasting only during the melting period, but real bodies of water, however ephemeral.

It happens that water is rather unhappily distributed on Mars. Only in the frigid zones is it found in any appreciable amount. That is exactly what should occur on a planet older than the Earth by many million years. As a world ages, its water supply diminishes. Oceans, lakes and rivers gradually dry up. Life, therefore, slowly disappears, and after millenniums the planet decays into a gigantic dead globe.

Reduce our Earth to the condition of Mars, confront us with the ever imminent water famine that must there prevail and we should sink all

international disputes in solving the one all-absorbing, economical problem of transporting the water yielded by the melting polar snows to those regions of our temperate and torrid zones which, if properly watered, would still be fertile. Irrigation on a scale that would hopelessly dwarf similar undertakings in the western part of the United States would meet our requirements most satisfactorily. Engineers would interlace the Earth with ditches to convey the arctic and antaretic water to the thirsty equatorial districts.

If Mars, therefore, is inhabited—and the two requisites of life are present—it must be conceded that its people are bound to save themselves from certain extinction by some elaborate system of irrigation. The unlocking of the polar seas must be as vitally important to those inhabitants as the annual inundation of the Nile is to the Egyptians.

Even as most astronomers will admit the waxing and waning of the polar snows, so will they grant the existence of greenish and reddish areas on the surface of Mars. But what these contrasting areas really are is only one of the many enigmas of an enigmatic planet. Of all the diverging views that have been advanced to explain the nature of the greens and reds, the most plausible is that of Professor Lowell—most plausible because based on sound geological and physical reasons, and on a series of recorded observations extending over many years. To Professor Lowell the red markings are deserts, unvarying in hue. What are the greenish spots? Not water; for he has seen them not only change in color with kaleidoscope facility as the seasons succeed one another, but change to the very red tint of the deserts. Not

water, according to Professor Pickering, for he has tested their reflected light as he has tested the reflections of the dark polar bands. To account for variations which are evidently seasonal, Professor Pickering has ingeniously suggested that the greenish regions are fertile lands, covered with vegetation, and that this vegetation, verdant in summer, naturally becomes russet in autumn, and eventually withers.

In that theory Professor Lowell concurs. What is more, he has advanced convincing arguments which seem to prove that these greenish stains and the polar caps are laced together by just such an irrigation system as that which, it has been shown, would be necessary to the preservation of Martian life. To Professor Lowell this irrigation system is revealed in an intricate network of lines, or stripes, which were first discovered by the Italian astronomer Schiaparelli. Schiaparelli called them "canals," and painstakingly christened them with alarmingly pedantic classical names which must be a source of perpetual delight to the student of ancient literatures. Lowell, by far the most assiduous and indefatigable observer of Mars, has succeeded in plotting nearly four hundred of these lines.

For years after Schiaparelli made his famous discovery, astronomers refused to believe in the "canals." They were unhesitatingly relegated to the category of optical illusions. Last year Mr. Lampland, of the Lowell Observatory staff, laid all doubts at rest by actually photographing them, thereby performing a most remarkable feat in astronomical photography. The camera, of course, has no optical illusions.

The very manner in which the "canals" are distributed proclaims their

artificial origin. They proceed from some point on the greenish areas to well-defined centres in the red desert regions. They proceed, moreover, not in a haphazard way, but by the shortest and straightest path. At that well-defined centre, they meet other lines similarly direct. So narrow are they that we see them chiefly because of their great length, varying as it does from a few hundred to several thousand miles. Some of them would extend from New York to San Francisco. The meeting of lines in many points is apparently intentional, and certainly unnatural; for nearly all of them run with spoke-like directness to hub-like spots.

You may argue that this precision is one of nature's many sports. That would be true if there were one hub and one or two spokes, but not otherwise. You may prove it to yourself by a simple experiment. Blindfold your eyes. With a piece of chalk draw a line on the blackboard. Walk away. Return to the blackboard and draw another line, with the definite purpose of crossing the first line. Repeat this process four hundred times. Unbandage your eyes. You will be astonished how disappointingly few of the lines really do manage to intersect at any common point. Indeed, the law of chance is decidedly against your succeeding even once. It is because the Martian canals meet one another in many points that they are so suspiciously artificial, so evidently constructed with wide-open eyes.

Not less remarkable than the "canals" themselves are the spots toward which they converge—spots which are invariably connected with one another by "canals," so that not one stands isolated: which are uniformly circular in shape; and which apparently grow on the planet shortly

after the "canals" are disclosed. The spots are not lakes, although for years they were considered lakes, and although their ponderous classical names imply that they are lakes. In all likelihood they are oases, as Professor Lowell has explained—probably the sites of Martian cities. Lakes should be invariable in color; but the oases deepen in hue in a way that can be accounted for only by vegetation. Then, again, their circular shape is as economic as the straightness of the "canals" themselves, for good mathematical reasons that need not be entered into here.

Both "canals" and spots exhibit the peculiarity of fading away, in part or in entirety, at regular intervals, so that they are lost to view. If the "canals" are really ditches it would, therefore, seem as if the Martian engineers were busily engaged in filling them at certain seasons of the year, only hastily to dig them again with the coming of spring. Here Professor Pickering has come to Professor Lowell's aid by pointing out that even when they are most conspicuous we do not see the "canals" at all, but merely the stripes of green, fertile land lying within the oases, and along the banks of a thread-like stream. The theory is supported by the fact that the "canals" gradually darken as summer ages, that they seemingly creep from the poles to the barren equatorial zone, and that their extension and decay correspond exactly with the rotation of the seasons.

"Canals" and oases are sufficiently remarkable in themselves to startle even the coldest and most phlegmatic scientist. And yet their disappearance and reappearance are not nearly so striking as their puzzling habit of appearing double at certain times. It was Schiaparelli who first saw the

"canals" at all. It was Schiaparelli who first discovered their "gemination," as the strange phenomenon is called. Very few astronomers who have not themselves seen the phenomenon are willing to admit the doubling; but Schiaparelli's discoveries have always been confirmed sooner or later. Some of the scientists who have seen a "canal" assume the aspect of a railroad track one thousand miles long look upon the phenomenon as the result of eye-strain. Were this so, all the "canals" would double simultaneously, whereas each "canal" is a law unto itself in this matter. Lowell's latest results show conclusively that the phenomenon is real.

If the "canals" are really artificial channels serving to irrigate the arid central zone of Mars, they represent a truly staggering engineering achievement. Granting that they are all that they seem, there is nothing in the nature of Martian things why they could not be dug. The reasons for this are few, simple, and telling.

We know that the surface of Mars is only one-quarter as extensive as the Earth's, and that seven planets like Mars would be required to make one Earth. Because of its smaller size, the force of gravitation on the surface of Mars must be correspondingly less. In other words, things weigh less on Mars than they do on the Earth; they are not pulled down so relentlessly. Paradoxical as it may seem, the smaller the planet, the larger would be its inhabitants and the more agile, all because of this lesser attraction of gravity. If we could transport ourselves to one of the enormous fixed stars—so enormous that the Earth, in comparison, would seem like a pea placed beside a mountain—we should weigh several tons, and should require the assistance of a steam crane in moving from place to

place. On Mars the opposite condition prevails. A Martian weighs only about a third as much as he would upon Earth, for which reason a Martian hippopotamus may be as graceful and lively as an Earthly antelope. The average Martian must be three times as tall, three times as bulky, and a very much more efficient human machine than our strongest man. Because of his greater stature, it can be mathematically demonstrated that his muscles must be twenty-seven times as effective.

Furthermore, when we consider the lesser force of gravity, the amazing possibilities of Martian athletes become apparent. Your Martian sprinter could run with the speed of an automobile; your Martian tennis-player would contemptuously regard our game of tennis as a form of ping-pong; your Martian coal heaver could pick up two and a half tons and toy with it; your Martian ditch-digger could do the work of fifty or sixty laborers of this world, and could throw over his shoulder an amount of earth that would make the performances of a powerful steam-shovel at Panama seem like the playful efforts of an infant delving sand at the seashore with a miniature tin spade.

Apart from their greater muscular development, these supposed inhabitants of Mars very probably have the inestimable advantage over us of greater intellectual power. They started to develop long before man appeared on this Earth. Despite all our boasted intellectual ability and our industrial progress, we are several million years behind the Martian times. For these very good reasons we may suppose that the people of Mars long ago invented mechanical contrivances—among them excavators—compared with which ours seem ridiculously crude and antiquated.

Because the temperature of Mars is higher than the Earth's, because its atmosphere is more attenuated, because the conditions to which organisms must adapt themselves are very different from those of the Earth,

we may well believe that the inhabitants of Mars differ, perhaps unpleasantly, from ourselves. But what manner of beings they may really be, even the wildest fancy can form no accurate conception.

Work of a Quarantine Station

BY DR. ALVOAH H. DOTY IN APPLETON'S MAGAZINE.

The New York station is taken as an example and the work there is minutely described. The reader will be interested to learn of all the precautions that are taken to prevent the passage of infectious diseases into the country.

THE work of a modern quarantine station involves many details.

The most important is the inspection of persons arriving on incoming vessels, for the purpose of detecting the presence of infectious disease. It is also necessary to ascertain, if possible, if those on board have been sick in transit or have been exposed to infection either at their homes or at the port of embarkation. This is the keynote of quarantine supervision, and the treatment of passengers, crews, and vessels depends on the result of this investigation. Quarantine medical officers must be practically familiar with infectious diseases in order to promptly detect their presence, not only typical cases, which as a rule are easily recognized by experts, but also the mild or irregular types. It is also important for them to know the location of sections throughout the world where outbreaks of infectious disease are present. This is essential, as it constitutes an important guide in the treatment of incoming vessels.

In order to detect some of the infectious diseases—for instance, cholera and bubonic plague—a bacteriological examination of specimens or

discharges is absolutely necessary, as it is only in this way that the presence of these diseases can as a rule be positively determined. For this reason it is imperative that a quarantine station be supplied with a properly equipped bacteriological laboratory.

A description of the methods employed at the New York quarantine station may be taken as illustrating the modern means of protecting seacoast towns against infectious diseases. Here are inspected more than one-half of all foreign vessels which enter United States ports and over four-fifths of all immigrants who arrive in this country. During the past year almost a million persons were examined at this station, representing at least an average daily inspection of twenty-five hundred persons. About one-third of the vessels arriving here require some form of disinfection. As over six thousand vessels were inspected during the past year, there were consequently about two thousand subjected to this treatment.

Within the past ten or fifteen years a great change has taken place in the character of shipping, particularly that which deals with for-

sign countries. Formerly the commerce of this port was carried on largely by sailing vessels. These are rapidly disappearing, and their place is being taken by steamships of great size and speed for the transportation of passengers and freight; some of these vessels exceed seven hundred feet in length. A very ingenious advertisement has shown one of them standing on end beside the Washington monument, and towering more than one hundred and fifty feet above this structure—the highest monolith in the world. These vessels sometimes carry between three and four thousand persons, including passengers and crew, besides an enormous amount of freight. They will travel at the rate of twenty-two or twenty-three nautical miles an hour throughout the entire voyage and will cross the ocean in less than six days. In order to obtain the power to do this, it is frequently necessary to consume five or six hundred tons of coal daily. Therefore while the number of vessels arriving at the port of New York has not materially changed, the tonnage is far greater and commerce has probably been increased to the extent of \$200,000,000 during the past six or seven years. In dealing with these great vessels at quarantine, as well as all others, every means is taken to detect the presence of infectious disease and carry out what measures are necessary for the protection of the public health with as little delay as possible.

The treatment of incoming trans-Atlantic mail steamships at quarantine differs somewhat from that given vessels from infected or suspected ports, or from ports which are long distances away and where some forms of infectious disease almost always exist, and from which points

reliable information regarding sanitary conditions cannot always be obtained. Trans-Atlantic mail steamships usually come from ports which are in good sanitary condition and under close scrutiny on the part of reliable native public health officials, and also the consular officers of the United States. Emigrants about to embark are carefully examined and as a rule vaccinated and their clothing and effects disinfected before they are allowed to board the vessel. These vessels have one and sometimes two surgeons, who are mindful of the fact that they are held to a strict accountability for the care of passengers in transit, the detection of disease, and the presentation of accurate reports.

The ordinary method of inspecting a trans-Atlantic steamship is as follows: Upon arriving at quarantine, the vessel is promptly boarded by a medical officer of this department, who on reaching the deck is met by the captain or his representative and the ship's surgeon. The latter reports in writing the number of passengers and crew, their physical condition, and any event of medical importance which may have occurred during the voyage. Long experience has shown that cabin passengers and members of the crews of these vessels only in rare instances transmit quarantinable diseases. Therefore the certificate of the ship's surgeon that the cabin passengers and crew are well is accepted in lieu of an examination. All steerage passengers, however, are personally examined. If the weather permits, they are lined up on deck with their heads uncovered and are marched slowly by the quarantine officer, who inspects each one. If suspicious cases present themselves during the inspection,

they are taken out of the line and subjected to further examination. All who are sick in the hospital or in their apartments, whether they are cabin or steerage passengers or members of the crew, are next examined. If satisfied that these are not cases of infectious disease and that everything on board is in a satisfactory sanitary condition, a pass or pratique is given by the quarantine officer and the vessel proceeds to the city. Cases on shipboard the diagnosis of which cannot be determined on arrival at quarantine, and also suspicious cases, are as a rule removed from the vessel and transferred to Swinburne Island for observation, the public in these instances being given the benefit of the doubt. The difficulty of examining two thousand or more steerage passengers on one vessel, where space is always greatly restricted, will be better appreciated by those who have crossed the ocean and are familiar with the small space available for this purpose. In order to be certain that all steerage passengers have presented themselves for examination, a quarantine assistant stands beside the medical officer with an automatic counter. The register of this must agree with the number of steerage passengers on the ship's manifest. In order to secure a proper count, it is occasionally necessary to inspect steerage passengers twice or three times.

Experience has shown that the method of examining trans-Atlantic mail steamships above described furnishes all the protection that practical and reasonable quarantine regulations can extend to the public under ordinary conditions. By ordinary conditions is meant that the ports of departure of these vessels are in good sanitary condition, that

the sections of the world from whence the steerage passengers come are believed to be free from outbreaks of infectious disease, and that no cases of this character have occurred in transit or are found on the arrival of the vessel at quarantine. If a condition other than this exists, the treatment which an incoming trans-Atlantic steamship receives on arrival at quarantine depends on the circumstances.

The inspection of vessels arriving from India, China and other Eastern, South American and African ports, where cholera, bubonic plague, or some form of infectious disease almost constantly exists, is of the most thorough character. These vessels are long in transit, and usually carry no surgeon and fortunately but few or no passengers. On their arrival at quarantine all on board are subjected to a careful examination, including the use of the clinical thermometer, and even if all are found to be well, their clothing and bedding are as a rule subjected to steam disinfection, and on these vessels, owing to the length of the voyage, an unrecognized or mild case of infectious disease may have occurred and recovered while in transit to this port. The best evidence has been presented to show that this not infrequently occurs. Extraordinary care is required to detect the presence of this class of cases on the vessels just referred to, as the crews of many of them are natives of the East, and will deliberately conceal the truth regarding their physical condition. It is not generally understood that a mild case may transmit infectious disease in the most virulent form. However, this is a fact.

In a general way, it may be said

that quarantine regulations cannot be enforced in accordance with written rules, but rather in compliance with the general principles of modern sanitation. Therefore the treatment of vessels at quarantine must necessarily depend on the circumstances which exist at the time of their arrival.

The New York quarantine establishment, a State institution, consists of the boarding station, close by Fort Wadsworth on Staten Island, and two small islands in the lower bay, about one mile apart, and about two and three miles respectively from the boarding station. In front of the latter are inspected all foreign vessels which arrive at the port of New York, and at certain times of the year some domestic ones also. At the boarding station are located the residences of the health officer and his deputies, the administration building, laboratories, etc., and the docks and boats belonging to the department.

Hoffman Island, the larger of the two islands, is for the reception of persons who are well but are held for observation. Separate buildings are provided for first and second cabin and steerage passengers. These buildings are situated on different parts of the island and are each provided with special service, and will furnish accommodations for two to three thousand persons.

Swinburne Island, situated below Hoffman Island, is for the care of those suffering from infectious diseases, or suspicious cases, and will accommodate about two hundred patients.

These islands, while sufficiently far from the mainland for safety, are practically in close communication with the quarantine station, and can be reached by boat within half

an hour or less. Hoffman and Swinburne islands are always prepared for the reception of passengers and crews removed from incoming vessels. This is essential, as quarantine work constantly deals with emergencies the character of which is known only on the arrival of vessels which in some way have become a menace to the public health. It may be of interest to add that both islands were artificially constructed on a sandbar about forty years ago. During the past ten years it has been found necessary to increase the area of Hoffman Island, which is now more than double its original size.

These islands are connected with the boarding station by special telephone service and are kept closely guarded, particularly when persons are held for observation or treatment. Four or five hundred are sometimes detained for observation at Hoffman Island at one time. In some instances it is practically impossible to prevent the separation of families in removal of immigrants from the vessel. They are of all nationalities and creeds, and are apt to be irritable, suspicious, and impatient to reach their destination, and pathetic instances not infrequently occur at the time of their transfer. However, the quarantine officials in charge of the islands are very patient with those under their care and do all in their power to make their stay at least bearable. The food is ample and of good quality, and as a rule those who are detained soon become reconciled to their detention, which may sometimes last one or two weeks. Italian passengers, particularly, easily adapt themselves to the situation and furnish means for their own amusement in the way of singing, playing, and

dancing, and impromptu concerts of no mean order frequently take place.

Cabin passengers held for observation are principally those who are not yellow fever immunes and who come from ports infected with this disease and arrive here before the period of incubation (five days) expires, which dates from the time of departure from the infected port. For instance, if the voyage lasts three days, they are held for two days at quarantine, and then released only after careful examination. As the yellow fever mosquito is not found in this section of the country, there is no danger of the propagation of the disease here. However, a mild case of yellow fever or a case in its very early stage reaching New York on an incoming vessel, if not discovered could go directly south, within the yellow fever zone, and an outbreak of the disease would probably follow. Therefore the precautions which are taken to prevent the entrance of yellow fever into New York are mainly for the protection of the south. It may be of interest to know that the yellow fever mosquito does not in itself transmit the disease, and it is only capable of doing so after it has been infected by biting a yellow fever patient.

One of the cardinal principles of quarantine requires that, if possible, those sick with infectious disease and all persons under observance shall be removed from the vessel as promptly as possible, and that after careful disinfection the vessel shall be released. Patients suffering from infectious diseases cannot be safely treated nor can persons held for observation be properly divided into groups in order to limit the transmission of infection while they remain on shipboard. Besides, this

procedure involves unnecessary detention of the vessel.

As a rule disinfection cannot be performed on a vessel. Therefore all properly equipped quarantine stations are supplied with apparatus for this purpose. The steam disinfection plant at Hoffman Island, which is probably the largest and best equipped one in the world, is used rather for the treatment of the effects of those who are transferred to this place for observation, or in emergencies where a large amount of material is to be treated. To depend on this plant for the ordinary daily disinfection at quarantine, which commonly consists only of the disinfection of the ship's forecabin and clothing of crew, would mean an unnecessary detention of vessels, as it would involve the removal of material to Hoffman Island for treatment and its return, as the depth of water does not permit seagoing vessels even to approach either of the quarantine islands. Besides, in foggy or in very rough weather it would sometimes be practically impossible to reach the disinfection plant. To facilitate this work the disinfecting steamer *James W. Wadsworth* was constructed about eight years ago, and is the first of its kind ever built. It has its own motive power and contains a steam chamber and every other means of disinfection known to science, besides bathing facilities for passengers and crew. This vessel is always under steam and can be taken at once to an incoming vessel which requires disinfection. The members of the crew or passengers whose effects are to be treated are transferred to the *James W. Wadsworth*, which lies close to the vessel. Here they disrobe and place their clothing in a bundle to which is attached a brass

tag containing a number, a duplicate of which, on an elastic cord, is hung about their necks. Their clothing is then placed in the steam chamber and disinfected while they take an ordinary bath. The bedding, etc., from

the vessel is also transferred for disinfection. While this work is in progress quarantine assistants are at work on the vessel disinfecting certain apartments which require treatment.

The French Failure at Panama

BY LINDSAY DENISON IN EVERYBODY'S MAGAZINE.

Even a hardened materialist would grow sad at sight of the French relics at Panama, the machinery, the houses—everything going to waste and decay. But even though the French did fail, they left some lasting indications of their presence in two stretches of finished canal.

THE magnificence of the French failure is not the least illuminating discovery that impresses the visitor to the Isthmus. We here at home are accustomed to believing that the French spent some twenty years on the Isthmus accomplishing nothing in particular; we have had a vague notion that they started the digging of the Culebra cut and made some useful surveys, and that they poured their millions of money into the Isthmus as ineffectually as though it had been water. One cannot spend much time on the Isthmus without discovering in himself a mighty respect for the French. They did a great work—though they hardly began the task which we have pledged ourselves to finish.

The canal line is about forty-seven miles long. The French practically completed eleven miles of it. From Colon harbor to Gatun, they dredged and dug a channel up which the largest ships steamed for nine miles without difficulty. From La Boca, at the other end, there were at least two miles of canal finished. In the twelve years or more which elapsed after the French gave up the project—merely keeping a sufficient force

scratching away at the Culebra cut to hold their franchise—these great ditches have filled up with silt and the Colon end of the canal is navigable for less than three miles. But a very few months of dredging will clear the channel again, and widen it to the extent required by the American plans.

The bed of the canal—the “canal prism,” the engineers call it—has been outlined from Atlantic to Pacific. At the point where we found Mr. Dauchy and the 90-ton shovel tearing its way into the rock, widening the prism, this outline was a ditch two hundred feet wide and fifty feet deep. It is not possible, even with the aid of the voluminous records which they left, to know exactly what the French plan was. But apparently dredging was to be an important feature of it. Near the town of Pedro Miguel—now colloquially Americanized to “Pete McGill”—is a great marine dredge of the most imposing capacity; it was set up high and dry on the top of the mountain twenty miles or more from either sea and with no water to float it bigger than a stream which a ten-year-old child could straddle. It is a

monument to the wonderful French devotion to the ideal even in the practical; it is not a thing to laugh at. Behold how magnificent was the thought!—by dry digging to excavate a ditch wide enough and deep enough to be filled with water which should float the dredge; then the dredge would deepen and lengthen this little pond on the mountain top and other dredges would join it, and voila!—the cut would be made by dredging and not by digging! And one of the most vexatious problems in this era of unpoetic engineering on the Isthmus is to get that huge hulk out of the canal prism without expending more in dynamite and labor on the plaguy thing than it cost the French when it was new.

It wrings the heart to ride across the Isthmus past an almost unbroken succession of ponderous pieces of machinery, brought from France at infinite pains and expense, abandoned, useless, overgrown by tropical creepers. One sees the smoke-stacks of twenty-five or thirty or fifty locomotives sticking out of the green; they are on a siding where they were deposited on delivery; never a pound of steam has been in their boilers.

In another spot are a line of cranes and bucket derricks, all too small and inefficient to be used in work on the scale that characterizes the American plan. Cut into the jungle with a machete for fifty feet, anywhere within quarter of a mile of the canal line, and there are disclosed trains of gravel cars, piles of steel rails of the thin, top-heavy French pattern, hundreds of buckets, rock tongs, and funny little hoisting engines.

It is hard for a layman to understand why all this old iron—they say the French spent \$92,000,000 in bringing it to the Isthmus—has not some

present value. But the engineers have but little patience with the suggestion. For instance, Mr. Holcombe, chief of the Chagres division, managed to use parts of two or three engines to make a water sterilizer for his camp at Bas Obispo and to convert a bucket-hoist into a ballast loader, but the labor required and the time expended made the result cost almost as much as though new machinery had been brought down from the United States. At Cristobal, Mr. Maltby, chief of the sea level division is throwing hundreds of the dinky little flat cars into the bulkheads along the waterfront as filling material. They make fine ballast—and they are useless as cars because, like the French locomotives, they are mounted on trucks so rigid that they cannot be used for fast work on roughly graded, temporary construction tramways.

The French built hundreds of houses and shops. They were well built and well equipped. But twelve years of complete neglect made most of them into rickety shells. It is impossible for a northerner to realize what the growth of the tropical jungle is. Not a hundred feet from one of the principal stations of the Panama Railroad the clearing away of a space for additional switch sidings discovered two large French dwellings whose existence had been unsuspected by the Americans for two years. They were cleaned and painted and repaired, and like hundreds of other houses which have been made over, are now comfortable homes for canal workers.

The French, it will be seen, therefore, left us much more than a mere right of way. They left buildings which we have been able to use for offices and quarters, and they left a very great deal of completed work.

Money Made While on the Move

SMITH'S WEEKLY.

The amount of time that is thrown away and absolutely wasted by people as they go to and from work or from one job to another, can be reckoned up in millions of hours. Some people, who have put this time to good use, show us an example of persistent application to work.

WHEN people who hadn't made their way in the world came to a man who very emphatically had done so, and lamented to him over their ill-luck, they did not get much comfort. He used to say to them: "You ought to have bought a ticket to carry you to success, as I did. You want to know where I got it from? Why, at the nearest railway station, of course!"

It puzzled a good many of his hearers. That wasn't much wonder. For it does not occur to many of the countless throng who are trying to get to the bright goal of success that they can find round the next corner a booking office where they can take a through ticket to that desirable destination.

Yet to the man who had made the discovery it was simplicity itself. He was a junior clerk in an office, with a poor salary. He knew that he was only an ordinary clerk, in no way different from thousands and thousands of others, and that as long as this remained the case it would need a very powerful imagination indeed to discover the faintest chances of his winning promotion.

So he decided to see if he could not put a broad line of distinction between himself and the average "pound a week man."

He had very little leisure time in the ordinary sense, but every morning and night he had to do an hour's traveling on the railway to get to business and home.

During three years he used this

time spent on the move in learning French, German, and Spanish, and in picking up a knowledge of double-entry bookkeeping. Then he applied for a good berth and got it.

So you see what he meant by saying that he bought his ticket for success at the nearest railway station. If you have to travel up and down every day there is no reason why you shouldn't do it—provided you are the right sort of young man. Quite a number of others, perhaps no brighter or cleverer than yourself, have made money and got nearer to success by utilizing time which thousands throw away.

(Thousands—yes, millions—of hours are wasted in London by people who have to travel to and from business.

Millions of hours positively thrown away and productive of no more results than if they had never been lived! It's startling and not pleasant to think of. Yet it's a fact.

What do you do when you go up and down between your suburban home and the city every day? Read the paper and smoke that favorite pipe of yours? Well, there's no moral sin about that. But—don't you think you might do a bit better?

A young fellow in a shop spent his time when on a train in studying the posters on the boardings near the line. He could draw and paint a bit, and at first he was just interested in the posters from an artistic point of view. Then the business view of the matter hit him.

Why couldn't he do something in

the same line himself? After that he spent his time while on the move in thinking out ideas and making rough sketches for posters. These he put into shape at night, after getting home, and submitted them to big advertising firms. He did so well that it was eventually not worth his while to work in any shop for 25 shillings a week.

Two clerks traveled to success in authorship—respectively in a third-class railway carriage and on the top of a 'bus. They were neither of them geniuses, but both were clever enough to see their chances.

The railway traveler was matter-of-fact and sensible, and began by carefully watching everything that passed about him, and then writing articles on subjects of the day and newsy paragraphs for the newspapers. He did not throw up his regular employment, but made a useful addition to his income by using time which would otherwise have been a dead loss.

The 'bus traveler was more imaginative and humorous, and also he was keenly observant. By keeping his eyes and ears open he saw and heard many curious and amusing things, which he turned into articles and stories and funny paragraphs. He never set the Thames on fire, but he made so nice a little extra sum while on the move that his weekly bills never troubled him, and he was able to lay up a nest egg in the bank.

But everybody can't be artists, or journalists, or authors?

That's your complaint, is it? And you can't be one of those things yourself, for the simple reason that Nature didn't intend you to be. Well, why make a fuss about it? Why not, instead, stir round a bit and see if you cannot hit on a new

way of using up that traveling time of yours to advantage? Get a move on while on the move, in short.

Did you ever hear of the young man who did himself a good turn by studying shop windows? Day after day for years he had to ride on a 'bus through miles of London streets. He occupied himself by studying the shops—observing how the windows were dressed, what establishments were the best patronized, and trying to guess why. And he also did all he could to decide, as far as he could by observation, which kind of shops did best in particular neighborhoods. Some people—quite superior people, you know—who knew what he was doing said it was an innocent little hobby.

It wasn't. It was a lot more. It was keen business. For when that young man thought he had acquired enough information, he resigned his stool in the office, and applied for a berth to a man who had scores of businesses in all parts of the country, and was continually starting new ones. And when the big man found that the applicant had quite a unique knowledge of shops and things appertaining to them, he snapped him up promptly, and was glad of the chance to pay him well.

In the same way a man who eked out a living as a poorly-remunerated insurance agent had to be always taking 'bus and train journeys in and about London. He might have occupied himself by glancing at the paper or doing nothing at all. But he didn't. He spent his time by making a systematic study of traffic on streets and rails. He was always on the watch, always adding to his knowledge of the subject.

And his journeys carried him to success at last. For when a new

motor 'bus company advertised for the services of a traffic expert, to whom they were prepared to pay a handsome salary, he applied for the berth and got it. Years of drudgery

could not have taught him so much or given him more ideas on one particular subject than he had learnt for himself, and picked up while on the move.

Carnegie, the Philanthropist.

BY HOLLIS W. FIELD IN WORKER'S MAGAZINE.

If as the writer notes, the name Carnegie comes to the visual notice of the world not fewer than fifteen billion times a year, it is because so many articles, both newspaper and magazine, are written about the man. In this tremendous output of printed matter, there is much that is mediocre but we venture to say that the following sketch is one of the cleverest that has ever been penned about the personality of Andrew Carnegie.

ONE social statistician, not wholly unbiassed, has said that the name "Andrew Carnegie" comes to the visual notice of the world not fewer than 15,000,000,000 times a year. This in itself is Fame. When it is sought to discover how this tremendous notoriety was established the story of the steel godmother and the steel fairies and the steel elves that accomplished it outdoes the combined literatures of Grimm and Hans Christian Andersen. For this story is Fact.

Yet, anomaly that it is, this may not be success. Carnegie says that it isn't. Driving with a close friend on the box of his four-in-hand coach a few years ago, this iron master and steel king, bitterly and with set jaw, said :

"I am 65 years old ; but if I could make Faust's bargain, I would give all that I have to live only one-half my life over again !"

Master of circumstance, master of men, master of wealth and of place in this world, one may recall the cynical Thackeray : "Which of us is happy in this world ? Which of us has his desire, or, having it, is satisfied ?"

Having too much, Carnegie has paid too much for it—which is poverty !

Shall one read otherwise between the lines of his life ?

Business was this man's sole god—business whose sign manual was the dollar mark. Just once allowing himself to refer to death, he spoke in public of his epitaph which he would have read : "Here lies a man who knew how to get around him a great many men who were much cleverer than himself." Yet the Andrew Carnegie whose powers of organization made possible the hundreds of millions which he would give away finds no pleasure in the company of business men. Gladstone, John Bright, Matthew Arnold, and Joseph Chamberlain have been his friends. William Black was a companion. Of his coveted millions, in earlier years he has been quoted :

"I have often said, and I now repeat, that the day is coming when the man who dies possessed of millions of available wealth which was free in his hands ready to be distributed will die disgraced. . . . I refer to that man who dies possessed of millions of securities which are held simply for the interest they produce that he may add to his hoard of miserable dollars."

But even this radical expression in

an age of millionaires shows the concessions of the man to circumstances and condition when one sets beside it an utterance of the steel king made more than twenty years ago :

"I believe socialism to be the grandest theory ever presented and I am sure that one day it will rule the world. That is the state we are drifting into. Then men will be content to work for the general welfare and share their riches with their neighbors. Then we shall have attained the millennium."

Yet on the day of this utterance his men in the Edgar Thomson works were in idleness and the Bessemer steel works at Homestead had posted notices of wage reductions of 10 to 30 per cent. Carnegie's defence of the condition, however, was that the association of steel workers were allowing other plants to run at a lower scale, underselling the Carnegie products.

Contradictory circumstances are necessary in the production of such a man as this. The university, which Carnegie despises, will not produce him and yet leave him with a million friends and admirers.

Carnegie began life in poverty and yet out of his fabulous riches looks upon poverty as the happiest circumstance in the life of any man who out of its depths may see mountain peaks on his horizon. "Abolish poverty?" he cried in a speech little more than six months ago. "Never! Abolish wealth; there is no heritage half so valuable as honest, unashamed poverty."

Yet a heritage of \$100,000,000 is to be the portion of his one child, and already one of the most magnificent mansions in all America is deeded to this one small daughter, whose every whim is gratified for less than the asking.

But it must be said Andrew Carnegie has given away \$150,000,000 of his colossal fortune to the common cause of the world's poverty and is still giving, while as a resident of New York City he is paying double the amount of taxes paid on personal property by Rockefeller, the richest man on the western hemisphere.

In the same spirit, there are those who have criticized Carnegie in the bloody days of the great strike at Homestead when Frick fronted the trouble and stood target for an assassin's bullet, while Carnegie in Scotland was whipping streams for salmon or strove to better his record on the golf links of his great estate at Skibo castle.

But two years ago Andrew Carnegie set aside \$5,000,000 in perpetuity, the interest of which is to be applied to a fund for the recognition and the relief of men and women whose demonstrated courage in saving human life shall raise them to the rank of heroes.

And when Thomas Scott years before was Assistant Secretary of War and had offered the young Carnegie the position of head of the Department of Military Roads and Telegraphs in the great Civil War Carnegie turned from war to the service of the Pennsylvania railway.

But when the war with Spain was declared and when Dewey's fleet went into fight with the Spanish ships in Manila Bay the mailed sides of the American vessels in that battle were protected by the invulnerable armor supplied from the mills founded by the young telegraph operator who thirty years before had turned his back upon war.

"There is a divinity which shapes our ends."

Andrew Carnegie to-day is 70 years old. Altogether he is an odd figure in

a crowd. He is markedly under medium height and by no means of sturdy build. His hair and beard are snow white, and, as so many people see him, there is a square, grim line of the mouth that suggests hardness—almost defiance. His eyes are a pale blue, set wide apart under a broad forehead that is without slant. The nose is blunt and thick and the set of the jaw shows tenacity and strength. To these features a clay-like pallor of the skin completes the effect necessary in a portrait of a man marked as one who epitomizes grit in all that the word means for one able to take the path to a definite end and to reach that end in spite of all obstacles.

This is the man evolved from the boy who, at 11 years old, was an emigrant in the steerage of a British steamer and who in ripened manhood returned to his native Scotland and parent Britain with tens of millions of dollars as free gifts for freer institutions.

This is the man on whose self-designed coat of arms are an inverted crown and a weaver's shuttle—the shuttle taken from his father's hand by the inroad of machinery, forcing the father from his native Dunfermline to the alien shores of the new America.

And this is the man, laird of Skibo castle and its 40,000 acres of field and moor and stream, who looks to his book, "Triumphant Democracy," as one of his distinct accomplishments in the new world of equality of all men before the law.

When the man Carnegie is weighed in the balance, perhaps it will be found that the strong Scotch accent which he brought with him to Pennsylvania was a key to opportunity. It was this accent which first caught the attentions of a homesick Scotch-

man in Pittsburgh. The result was that Thomas A. Scott, superintendent of a division of the Pennsylvania Railroad, invited the former mill "bobbin boy" and the third person in the country to master the Morse alphabet by sound, to come into his office at \$35 a month. It was Scott who spoke kindly of "that little Scotch devil" in his office, and it was Scott who advised that little devil to invest \$500 in ten shares of Adams Express Company stock. The boy's mother had mortgaged the little home for much of the sum, but it was young Carnegie himself, receiving the first dividend from his stock, "hailed myself a capitalist, rich at the receipt of money that I had not earned by toil."

Critics have charged—as his friends have admitted—that in thus speaking of himself and not the mother as the "capitalist," one of the characteristics of the great millionaire finds expression. At the same time no one will allow the whisper of a thought that Carnegie was ever less than the most devoted of sons to that canny, unselfish mother. Years afterward, when the boy's millions were his care, a private secretary was a witness to a pathetic picture of this singleness of devotion.

Carnegie was in his library, busy with his papers and correspondence. The old mother entered the room in a querulous mood. She advanced to the son's side, reaching over his arm and picking up a paper here and there, looking at it and asking needless questions. Carnegie was disturbed, but his face showed not the least sign of annoyance. He answered her questions with assumed smiles until the old lady herself wearied of the questions.

"Well, Andrew, I'll go now," she

said, rising; "I only came in to bother ye a bit."

"But you didn't do it, did ye, mother?" he said, rising and putting his arm around her as he walked with her to the door.

When the old mother died in 1886, a few months after the death of the brother Tom, and while Andrew Carnegie himself was scarcely recovered from the crisis of typhoid fever, the mother and son were in a cottage in the Alleghanies with midwinter cold outside.

"Don't let me know when she dies," he said to a close friend who had been watcher for both of them there in the hills.

And when the grim reaper of men entered the night and the spirit of the faithful old mother passed into the infinite, the friend entered the sick-room of the son on tiptoe. The foot-fall and a glance from one to the other was enough. The millionaire turned his face to the blank wall and the friend stole out again, softly as he had come.

Death is the one horror of this man of many millions. When he was himself again friends could read in his face the shadow of bitterness that never was there before and which never since has cleared away. Agnosticism, which always is the aggressive mark of the man, had no balm for the wound. Yet—

"Death is king, and vivat rex."

Carnegie Bros. & Co., Limited, was the steel master's house of business in 1892, working together with the house of Carnegie, Phipps & Co. The specialties of the first concern were steel rails, armor plate, and bridge and structural steel, with mills in Braddock township; the other house turned out armor plate at Homestead, operated the Keystone Bridge Works in Pittsburgh, and stood

sponsor for the Hartman Steel Works in Beaver county. And the name "Carnegie" was rolled into every Bessemer rail turned out in these works with their combined capital of \$10,000,000. The steelmaster was master, owning 50 per cent. of the stock in both houses.

Carnegie had been the force in the evolution of the steel industry in America. As the successor to Scott as division superintendent of the Pittsburgh link in the Pennsylvania Company his attention had been drawn to the innovation replacing wooden bridges with bridges of cast iron. Carnegie had seen the possibilities of bridges of Bessemer steel, and it was the Carnegie house which had put the first 300-foot span of steel out over the currents of the Ohio.

Forge worker himself, Carnegie had both brain and hand for the steel venture, which took gigantic form in that year 1892. The Carnegie Steel Company, Limited, with a capital of \$25,000,000, was the venture. Carnegie held 51 per cent. of the stock; for, accurate judge of men that he is, and congratulate himself as he will upon the devoted services of his organization, the Carnegie ventures are Carnegie's in the last analysis. Henry Clay Frick became a member of the corporation with 6 per cent. of the stock.

Frick had been a right-hand man to Carnegie long before. He had been considered the daring man of the association. It was Frick who suggested the purchase of the oil lands and the leases of gas territories which were to become such saving features in fuel.

Schwab was in the new concern — the Schwab whom Carnegie had picked up as a ragged mountain lad, who had held out for 50 cents, and got it, for showing the millionaire the way

over a tortuous mountain road when the millionaire had thought 25 cents enough for the service. Phipps, Lovejoy, Peacock, and Lauder were stockholders. As showing the profits of the Carnegie Steel Company from its organization in 1892, the net profits of that year were \$4,000,000; the same profits for 1899, at the formation of the United States Steel Corporation, were listed at \$21,000,000 for that year.

Frick had been the manager of the corporation in these years. Carnegie's first steel rails sold for \$174 a ton in 1867; in 1897 the gross cost on rails, loaded at the Braddock mills, was \$12 a ton. It was in January, 1900, that the efforts to oust Frick from the steel corporation brought the Frick charges and the Frick suits, all of which were hushed in a compromise. In 1901 Morgan interests in United States Steel absorbed Carnegie, and he retired to his Skibo castle in the Scottish highlands.

Of the \$150,000,000 given by this many sided millionaire to the cause of almost everything but religion, some of the larger gifts may be recounted. While his libraries have the attention of the people more than any other of his favored institutions and purposes, the sum total for these is inconsiderable by comparison. His gifts to scores of interests might easily suffice the richest fancies in fairy tales. And still his own private fortune is estimated at close to \$300,000,000.

Some of the most notable of his benefactions are:

Libraries in the United States	\$28,000,000
Libraries in Great Britain and Canada	9,000,000
Carnegie National University	10,000,000
To small colleges	17,000,000
Annuities to aged teachers	10,000,000

Scotch universities' endowments	15,000,000
Miscellaneous benefactions in United States	19,000,000
Miscellaneous benefactions in Europe	10,000,000

Yet the giver of these fabulous sums toward the general good has been charged with having an almost deaf ear to personal charities. He resents the word "philanthropist" as it has been applied to him.

"A philanthropist," he says in definition of the word, "is a man who has more money than brains."

Mr. Carnegie, after the death of his mother, was married in 1887 to Miss Louise Whitfield. Ten years later the "little missy" of the household appeared, the joy of father and mother. She shares with her mother the honors of mistressship Skibo castle and its 40,000 acres of highland beauty, and the great mansion in Fifth avenue, New York, is hers by warranty deed.

Skibo is a paradise, especially as it appears to the visitor and guest. For, with all the iron in the nature of the steelmaster as is developed in his business dealings with men, brooking no opposition and yielding to no force of condition and circumstance, he has a winning personality under guise of a grim expression of mouth and chin. To dozens of his fast friends who knew him in the old days he is still the "Andy" of the Pittsburg telegraph office. And at Skibo nothing pleases him more than meeting those occasional groups of canny clansmen who address him with the phrase, "Hoot, mon."

But home is his realization and his heaven. It was happily expressed when over the fireplace in his brother's Florida home he caused to be inscribed the sentiment:

"The Hearth Our Altar; Its Flame Our Sacred Fire."

The Railways of Africa

BY SIR PERCY GIROUARD, K.C.M.G., IN SCRIBNER'S MAGAZINE.

The following article is a condensation of a lengthy and exhaustive description of the railways of Africa prepared by a Canadian, who won distinction as a railroad builder under Kitchener in the Sudan. It throws light on a subject about which people on the American continent know very little.

THE railways of Egypt were the earliest to be constructed on the African continent. Initiated in 1856, they only aggregated 400 miles by 1870. Through all these years they, however, held a position of great importance in being a vital link in the connection of Europe with the East. In the earlier days, before the lines had been constructed from Cairo to Suez, a long and uncomfortable journey through the desert formed a part of the tedious itinerary of passengers to and from the East. The opening of the Suez Canal obviated the use of the Egyptian railways in Oriental traveling, and they relapsed into their true function of developers of the rich agricultural lands of Egypt.

By the earlier seventies, in order to secure a hold upon the Sudan provinces owing allegiance through the Khedive to the Sultan of Turkey, a beginning was made in the construction of the Sudan Railway. Starting from Wadi Halfa, it was traced by way of the Dongola province across the great Bayuda Desert to Khartum. Some fifty miles of earthwork and track-laying were completed, when the financial difficulties brought about by the general extravagance of Egyptian administration supervened and the works were closed down.

This occurrence was to have baleful effects upon the future of the Sudan and Egypt. The lack of touch which existed between the upper and lower Nile, and the great expenditure necessary to keep up the land communications, all tended to make prac-

ticable the overthrow of Egyptian government in its Sudan provinces.

In 1882 England had established its arms in Egypt; by 1885 the banner of revolt had been raised in all her Sudan provinces. The dispatch of a British expedition, the expenditure of millions, could not, owing to the difficulties of land transport, save the provinces or the great Christian soldier who administered them. The Sudan was delivered over to fire and sword and remained a closed book for twelve years, during which time only two Europeans appeared to tell the tale of its downfall. Had the Sudan Railway been a completed fact, how different might this page of history have been!

From 1885 to 1898 Egypt proper, under wise and economical administration, advanced amazingly in prosperity. Its railway system extended in every possible direction, and by 1898 comprised some 1,400 miles of main line, under state control, and over 750 miles of narrow gauge feeders, worked by private enterprise.

This maintained prosperity of the country has in the last few years had the effect of still further developing railway extensions in all parts of the country.

In 1896 it was decided that the time had arrived for Egypt to reassert her control over her Sudan provinces, and in such a manner as to make it possible that her prestige would be maintained. To Sir Herbert Kitchener, Sirdar of the Egyptian army, was intrusted the task of ending the reign of terror under

which the whole Sudan trembled. To attain this double result, the Sirdar determined that his advance should leave in its wake communications of a lasting character. Railways were to reconquer and retain the Sudan. In a rapid advance to Dongola he constructed behind him some 200 miles of railway parallel with the un-navigable Nile.

The success of his arms was signal; the Dongola province was regained.

Between the province of Dongola and his ultimate goal, Khartum, lay a choice of two routes—to throw his forces at Khartum by a march across the Bayuda Desert or to force his way up the Nile to Abu Hamed, where the river became navigable toward his goal. The former had been the main route adopted in the vain effort to relieve Khartum in 1885; both had the objection of reliance upon the camel transport. Sir Herbert Kitchener chose a third alternative. He conceived the possibility of throwing a band of railway metals directly from his base at Wadi Halfa across the unknown Nubian Desert to Abu Hamed, a distance estimated at 220 to 250 miles.

The conception was a great one, attended as it was by many adverse circumstances—the lack of knowledge of the country, its waterlessness, the torrid heat, the nature of the staff available.

Nor were critics lacking who predicted failure. Undeterred, the Sirdar launched his railway battalions into the unknown.

The success of his venture is a matter of history. Between May and October, 1897, Hamed was reached within a week of the date predicted many months before. The English and Egyptian forces had conquered the fastness which had so much

hampered their predecessors. Khartum and the Sudan were regained.

These railways, which were of three-feet-six-inch-gauge, laid with fifty-pound rails and provided with excellent rolling stock, were constructed at a cost of £1,300 to £1,500 a mile.

From 1897 onward the Sudan railways were rapidly extended to Khartum, whence 1,000 miles of free Nile was available, and now in 1906 the long-talked-of project of a railway from Suakin to Berber will shortly have become an accomplished fact. Eleven hundred miles of railway constructed since 1896, and mainly from 1896 to 1898, is the main factor which will conduce to the continued peace and ultimate prosperity of the upper reaches of the Nile and to the freedom of the peoples depending upon it.

The railways of the Sudan allowed of access to the upper waters of the Nile for over a thousand miles, but a great barrier of watery growths and a succession of falls and rapids barred the use of this route as a means of reaching the great lakes from which the river took its source. Here a teeming and industrious population of negroes had, under the care of a faithful band of missionaries, largely embraced Christianity and adopted methods of civilization which promised well for their future. The lake plateau was, however, most inaccessible, entailing, as it did, a dangerous journey of weeks from the seaport of Mombasa. The Government of Great Britain determined to endow its possessions in East Africa with rail communication. The Uganda Railway was created.

The general configuration of the country was not opposed to economical railway construction except at one point. Rising steadily from the coast line through dense jungle, infested

by lions and their kind, the line reached in 300 miles the Kikuyu highlands, some 7,500 feet above the sea. Here a vast volcanic rift, some thirty miles wide, was encountered, traversing the entire country from north to south. The line dropping into it falls to a level of 6,000 feet, to rise immediately, in less than forty miles, to the final watershed, 8,300 feet, whence in less than 100 miles, with a great drop of 2,300 feet, the shores of Victoria Nyanza are reached, 580 miles from the sea.

The detailed surveys for the railway began in August, 1895, though preliminary surveys on various routes had been carried out from 1891 to 1893. The three parties organized suffered great hardships. For the first 200 miles the country was in jungle or covered with the pest of the surveyor in North, East, and South Africa—dense thorn-bush. The bush was infested with the tsetse-fly, rendering the assistance of animal transport impracticable. This part of the country was sparsely inhabited and water supplies were scarce and bad. The defection of native porters and the ravages of malaria were the two most trying of the many hardships which had to be overcome. Notwithstanding the great difficulties, the surveys were rapidly pushed to a conclusion.

It had been hoped that the native population would have provided a certain proportion of the construction working parties, but in this the contractors were disappointed, and the importation of Indian labor had to be resorted to, over 20,000 being employed. The provision of supplies, water and stores for this army of workmen was one of great anxiety.

Track-laying was started in July, 1896, and the whole line was laid on its 580 miles by November, 1900. The

pace of track-laying does not form a record, but the construction of the line does in many ways.

Subjected as it was to every climatic difficulty for its staff and transport—to an absolute lack of water over great stretches, to the raids of the *Teredo navalis* on its sea works and of the white ant on the land—faced with rainfalls of the most abnormal character (upward of twenty inches in twenty-four hours), necessitating the provision of unlimited bridging—its rapid construction reflects nothing but the highest credit upon the ingenuity and perseverance of its constructors and engineers.

The gauge chosen for the Uganda Railway was the metre, a decision which it is difficult to understand. When the Uganda Railway was initiated, the greatest British system in Africa was that of South Africa, where some 4,000 miles of 3 foot 6 inch gauge were in existence, and it was well known that Mr. Rhodes had the idea of extending northwards to Uganda if not to Khartum, all being 3 foot 6 inch projects. In Egypt the gauge was 4 feet 8 1-2 inches, though the extension to the first cataract, then in progress, was unaccountably being carried out as a metre gauge line. At Wady Halfa remained the derelict Sudan Railway, constructed on 3 foot 6 inch gauge in the seventies. Everything pointed to an early extension into the Sudan of 3 foot 6 inch gauge. This was realized, for between 1896 and 1898 nearly 800 miles of 3 foot 6 inch gauge were completed in the Sudan, and the Egyptian Government extension to the first cataract was converted from metre to 3 foot 6 inch gauge. The choice, therefore, of the metre gauge for a British line was, and is, unintelligible. The gauge of Africa generally is now practically fixed as 3

feet 6 inches south, north, and west (where the Benguela Line is throwing out a long arm from Lobito Bay toward Rhodesia). It would be a wise act of statecraft for the various European powers interested in Africa to decide upon this universal gauge and avoid the situation produced in Australia by a multiplication of gauges.

One special feature in railway construction was adopted upon the Uganda Railway.

The descent into the Great Rift Valley necessitated extremely heavy works, estimated to take over a year to complete. In order to reach work of a lighter character beyond, it was decided to construct a rope lift to lower materials into the valley. The lift overcame a difference of 1,520 feet and had gradients of nearly fifty per cent. Specially constructed travelers worked up and down these inclines, the full going down hauling the empty ones up. The travelers or cars ferried the ordinary wagons in use. From the bottom of the incline some miles of temporary line brought the wagons on to the permanent alignment of the railway at a point beyond the heavy works mentioned, and thus permitted of a more early completion of the entire line.

The Uganda Railway is the great tropical line of Africa. Elsewhere within the tropics, upon the west as well as the east coast, it will be seen from the map that but little progress has been made except in the English and French colonies of West Africa. The French railways would appear to have now attained the lead, and by the construction of the line from Kayes to the Niger opened up a territory equal in extent to that tapped by the Uganda line. This line will, moreover, establish their supremacy

over the whole of the upper reaches of the Niger.

Nowhere in Africa have railways been constructed under greater difficulties as to climate and staff, and for any true comparison one would have to turn to the lines of Central America.

Subjected to an annual rainfall varying from 100 to 175 inches, mainly falling in three months of the year, beset by every form of animal pest which makes the life of man unendurable, exposed to virulent disease liable to leave its mark for a lifetime, provided perforce with labor of an inferior character, the constructors and engineers of the railways of West Africa and of the Congo are only to be congratulated on the great success of their endeavors. Others may now come to carry on their task, but their labors will be largely confined to regions of a comparatively healthier character.

Critics have averred that the cost of West African railways has been abnormal, and that it was largely due to the method by which they were constructed, viz., departmentally and not by contract. An examination of the estimates for these railways amply demonstrates the unfair nature of the contention. To have carried the work out in any other manner than was adopted would have undoubtedly entailed far greater initial expenditure.

Though all these tropical lines, with the exception of the Uganda, make but a small showing on the map of Africa, they have opened up within twelve years Central Africa and the valleys of the Congo and the Niger. They have been the pioneers through almost impenetrable countries; their debouchures now stand on the edge of all the hinterland of Africa.

Their construction has not been

attended by any great conflicts with the native races. Wrapped up in their future extension is the progress and emancipation of the African continent and its native peoples.

The European nations have begun their task well, and, provided always that humanitarian principles override national greed or personal gain, great fruits should accrue.

South Africa was the second country of Africa to initiate railway construction. A year after the opening of the first line in Egypt, an innovation which in that country of ancient ideals appeared to be almost a desecration, the first sod of the railway system of South Africa was turned.

The railway system of the Cape Colony is the most important from a point of view of mileage, comprising some 2,800 miles. Started in 1856, but little progress was made until the seventies, a circumstance which must in a large measure be attributed to the form of government with which the colony was endowed. The discovery of diamonds and the gift of self-government, occurring almost concurrently in the early seventies, gave a great impetus to the forward policy. Three great lines were rapidly laid out toward the interior, one from each port, and within a few short years the Cape Colony was provided with railways in every important centre.

To the north from 1889 to 1899 the power and genius of one great man, Cecil Rhodes, was retaining for the British Empire vast possessions. Though this name is associated with much of the material progress of South Africa in the last decades of the nineteenth century, more particularly will the colony which bears his name in great letters over its broad surface be a lasting testimony of his deep insight into the future of

South Africa—the land which he chose as a final resting place. Rhodesia of 1889 was a wilderness, Rhodesia of 1899 an empire—a metamorphosis which must mainly be attributed to the aid of railways.

These railways pushed with great rapidity through unknown country and in the face of many difficulties, both natural and climatical, have given to the future confederation of South Africa provinces of inestimable value.

Here lies a great country ready for the pioneers of empire. Vicissitudes of many natures have been overcome and are to be surmounted, but none which the forbears of the race have not faced in other colonial possessions; none which will prevent the ultimate establishment of a prosperous community. The railway must play a great part in the future, and it is a fortunate circumstance that the natural features of the country lend themselves generally to inexpensive and rapid railway progress.

Though these natural obstacles have not, and will not be very serious, one has presented almost unique features and has produced the greatest bridging project of Africa.

The Zambesi River, carrying a huge volume of water, two miles in width, as it reaches the western borders of Rhodesia precipitates itself into a cavernous gorge, and thus traverses the northern plains of the country.

This great drop in the river has produced "the most beautiful gem of the earth's scenery," the Victoria Falls. Almost twice as broad as Niagara, and two and a half times as high, an immense mass of water rolls over its edge to precipitate itself in magnificent splendor four hundred sheer feet into the canyon below.

Undeterred, the Rhodesian engineers have without detracting from

the natural beauty of the surroundings, thrown across the canyon a splendid 650-foot cantilever bridge and thus opened the way to Tanganyika, to Uganda, to Cairo.

This bridge, the greatest railway engineering triumph of Africa, deserves more than a passing notice. It consists of a central span weighing approximately 1,000 tons, 500 feet in length, and 30 feet wide. The steelwork is of rolled steel weighing 490 pounds to the cubic foot. The end posts of the bridge are over 100 feet long. The pull on the anchorage apparatus is about 400 tons.

The contract for the construction was obtained by an English firm of bridge builders—the contract time fifty-five weeks. The work of erection was carried on from both banks, the material being taken across the river by means of an aerial electric railway. The electrical conveyor of this cableway was capable of dealing with a ten-ton load at a lifting speed of 20 feet per minute and a traversing speed of 300 feet a minute.

An initial difficulty in the construction of the bridge was the securing of a firm foundation, and owing to the

crumbling nature of the bank a much greater quantity of concrete was necessary than estimated.

The construction was happily unattended by accidents of a serious nature, though a few slight accidents to bodywork and the replacing from England of one piece of steelwork were recorded. In spite of these delays the bridge was linked up at 7 a.m. on April 1, 1905, or exactly 48 hours earlier than had been estimated a year before. Truly a record in African, if not in any, bridge construction on so large a scale.

From 1899 to 1902 the entire railway system of South Africa was submitted to the greatest strain a railway can endure—the test of what proved to be a great war.

It does not lie within the province of this paper to dilate upon the political situation which brought on a war, like all others, to be regretted, as the means of honorably settling human disputes. The railways, however, did materially assist in shortening the duration of the struggle and will doubtless prove to be in the future an important factor in the harmonization of ideals.

Creating Wealth from Waste

BY EUGENE WOOD IN THE SCRAP BOOK.

As the march of progress advances, the waste products of industry are growing less and less for the reason that every day new uses for them are being discovered. In nearly every industry there is waste, but thanks to the labor of scientists the waste is being reduced to a minimum and humanity is deriving a complete utility from its labor.

THE true test of the industrial civilization of a people is the extent to which every scrap and grain of its resources are utilized. The motto of a prosperous nation is: "Gather up the fragments that nothing be lost."

That the last few years have seen

such an increase in the production of wealth as has never been known before in the history of the world is not to be wondered at when it is realized that in every department of industry those things that had been previously thrown away have become a source of revenue, and, in some

cases, the by-product has become of more value than the original product itself.

The recovery of wealth from waste is the distinguishing mark of the age, because this is the age of industrial civilization. If the increase in the production of wealth is greater and more rapid than it has ever been since man first landed on this earth, without either a penny or a pocket to put the penny in, it is due to the general extension of methods that have been in use ever since he began to try to pick a living out of the clinched fist of dour old Mother Nature.

The delicate perfumes of flowers that otherwise would vanish in a day are trapped in lard, and then snared again from the lard by alcohol. The crusted argols that gather on the inside of the vats where wine ferments are utilized to make the cream of tartar for our biscuits.

The bloom of health that glows upon the cheeks of the ladies of the chorus may be traced to the tin pans and cups that jingle on the rag-collector's wagon. These homely and prosaic vessels are made of plates of iron, coated, all too thinly in these degenerate days, with tin.

These iron plates have to be "pickled," as the trade phrase goes. All the rust and other substances than the clean iron have to be washed off with acids and water. The pickling liquor is not emptied out as slops by any means. There is a finely divided iron rust floating in it, and when the water is removed by evaporating it, the residue is Venetian red and iron pigment that, made up as rouge, can counterfeit the ruddy blood that courses so near the surface of the satin skin of youth.

It is almost a personal triumph to

us to know that the broken bits of rock from the quarry, unfit to use as building material, are turned into crushed stone, for which there is so large a demand, thanks to the increasing popularity of concrete, and that its revenues pay the operating expenses of the quarry, and make the price got from building stone so much clear money.

Illuminating gas has to be washed and scrubbed anyhow before it can be introduced into our houses. The household ammonia with which the kitchen sink is kept so sweet is taken by the thousand tons from the scrub-water of the gas-house and the furnace gas of ironworks.

Meat packers will tell you that nowadays they save everything but the pig's last dying squeal. Naturally, the hides and skins of the animals slaughtered are worth saving. The tips of cows' horns are used for the mouthpieces of pipes; the horns themselves are split and pressed flat, and combs, the backs of brushes, and large buttons are made of them. What bits and splinters are too small to be worked up go for fertilizer.

Hoofs are sorted by colors. The white ones go to Japan, there to be made up into ornaments of artistic merit. We haven't got that far along ourselves. The striped ones stay here to be made up into buttons. The black one are utilized in the manufacture of cyanide of potash, by which gold is extracted from low-grade ores it formerly did not pay to work.

The bones in the feet of cattle bear up a great weight, so they are hard and take a high polish. They can be used instead of ivory, which is getting scarce. Tooth brush handles and cutlery handles are made of these bones. The others in the skeleton are built of lime stuck together with glue

and molded into shape by the push and pull of muscles.

The soft bones of the head, shoulders, ribs and breast do not need to be so stiff as the bones of the legs; they have more glue in proportion to lime than the leg-bones. The animal needs a kind of flexible, weather-proof varnish flowed over it, so to speak, to protect the tissues. Glue is what makes this coat or hide. So from bones and scraps and trimmings of hide this glue or gelatin is soaked out. Even the bones on which meat has been cooked have some little dribs of gelatin and fat in them, and these are stewed under pressure until there is nothing left in them of the gelatin, of which they now make the little capsules in which the druggist puts the medicine whose taste we don't just fancy, and fats which go to the soap-maker for the want of a better destination.

From the bodies of cows is obtained the tallow which is made into oleomargarine.

The prevailing ailment of the American people is dyspepsia, which is due to a natural lack of pepsin. But it has been found out that the pig's pepsin will do as well as our own, so it is prepared for the drug trade and sold at considerably above the price per pound of the hog on the hoof.

There are all sorts of obscure nervous troubles which can be very materially helped by substance extracted from the gray matter of calves' brains.

A growing child should make red corpuscles in his blood at a great rate. All the processes which construct his bones and his flesh and his various organs should be working full-powered. The red rib-marrow of freshly killed young animals contains a substance which is soluble in chemically pure glycerin and can be

digested out of that red rib-marrow, and, which, if given to the child, greatly increases the proportion of red corpuscles in the blood and stimulates all the constructive processes of the body. This will sell for a much larger sum a pound than veal.

And so there are various other substances taken from the sweetbreads proper, the neck-and-throat sweetbreads, the thyroid gland, the parotids, and the suprarenal capsules which can be used in medicine and can be sold at a large profit to people brought up to believe that "eating the part strengthens the part."

And when all has been extracted that you would think could be extracted, all the bits and scraps and scrapings and what not are put into a tank and cooked and cooked until all is dissolved that can be dissolved. The residual fat is skimmed off, and the last bit of glue, and the insoluble matter at the bottom of the tank, go for fertilizer, and then, in the packing-houses that don't know their business, the tank water is let run away. But there is much valuable nitrogenous matter in those waters which the first-rate packers utilize. And there is glycerin there.

In the old days the candle-makers who used palm oil had their own troubles with glycerin. If a candle was blown out, the smoldering wick used to leave an offensive odor. It was the glycerin that caused this. Naturally, the only thing to do was to take it out of the candle, and the next thing was to get rid of it down the gully into the creek. People complained, as people will; but what else was an honest Chandler to do? Latterly they have been figuring on the matter, and some of them have come to the conclusion that they used to let as much as two thousand dol-

lars' worth of glycerin get away from them every week.

In the last five years the soap-makers have learned that they can realize more money out of the glycerin than they can out of the soap they make. Some of this glycerin is refined, but the great part of the crude goes to the manufacturers of dynamite, which is nitroglycerin mixed with infusorial earth, so as to weaken it.

There is just as much acid after the glycerin is turned into nitroglycerin as there was before. After it is washed out the nitro is left apparently unchanged. It is not broken up, but it is on the edge of it. Give it a knock and it all flies to pieces at once so suddenly that it will loosen more dirt in a second than a hundred pick-and-shovel men could in a week.

Back of the tin shop there used to be a heap of shining clippings. The heap of clippings isn't there now. If there are any bits of tin too small to make the backs of buttons, they are pressed together to make window-sash weights.

Nor is that pile of sawdust back of the sawmill any more. The butchers want it for their floors, but that isn't the most economical use of it. There are acetic acid, wood alcohol, naphtha, wood-tar (and all that that implies) to be had from the distillation of sawdust—to say nothing of sugar from birch sawdust. The reason there isn't more money in the sawdust than in sashes, doors, and blinds which the factory turns out is because we have more faith in cog-wheels than we have in test tubes.

In machinery, big or little, Americans stand at the head of the class; in industrial chemistry they are at the foot of the class.

We pay the Germans about ten times what we ought to for phen-

acetin, because we can't get it into our heads that there is any money in applied organic chemistry. Coal-tar was once a nuisance, but the Germans make indigo so much better and cheaper from it now that they have put the indigo plant out of business.

The red trousers of the French soldiers are dyed with German alizarin, also a coal-tar product, because it doesn't pay to raise madder any longer. In coal-tar are all sorts of valuable drugs, dyes and perfumes. But we don't know it—industrially.

Stay! I do my country an injustice. We can make moth balls and carbolic acid. But that is as much as ever we can do. And this is why we do not utilize the sawdust and make a better business out of it than the sawmill can.

And garbage! I wonder how much orange peel and lemon peel is thrown away in New York City every day, and how much the neroli or essential oil that could be got from it would be worth. I wonder if the stalks and fag-ends of vegetables could not be distilled and something made from them. But the limit of our wisdom in regard to garbage is: burn it and get power from it. Somebody is going to get rich from this garbage problem one of these days. But it will be the test-tube and not the cog-wheel that will make the money. It will be the industrial chemist, not the mechanic.

See what a difference such knowledge has made in the wool industry. Sheep's wool is dirty and greasy when it comes to the mills. Wash it with strong alkali in running water. That is what has always been done. But a man in Massachusetts thought it would be a good idea to dissolve the grease with some such solvent as naphtha. He saved the naphtha to use over again; he recovered the

grease, which is the most softening and penetrating of all fats and is most valuable for ointments, and he recovered carbonate of potash. Sheep wearing heavy wool in the hot weather perspire freely, and this perspiration contains carbonate of potash.

After the wool is once woven into cloth, we may dismiss from our minds all thought of effecting any more economies. When the suit of clothes is worn to rags, the rags are still as good as new, for the wool is picked out into strands of fiber again and woven anew. It isn't ground into shoddy as it was in the days of the Civil War.

The wool is picked apart as long as it has any staple to it at all, and forms part of the most expensive and enduring of fabrics. It may be mixed with cotton, but when it comes to be a rag again, the cotton is burned out either with acid or with heat, the dust is taken out, and once more behold absolutely pure wool, much safer to wear than the new wool of the tropics and semi-tropics. And when at length there is not enough wool to hold together, still it goes into our clothing. With wood ashes and scrap iron it ceases to be a fabric and becomes a dye—Prussian blue.

The cotton rag has no such long life. All it is good for is paper stock. The paper business is essentially a wealth from waste industry. For a long time, linen rags, cotton rags, and old rope were the only materials of which paper were made. Cheap books and magazines and newspapers had to wait until it was discovered that the resins and gums in which the fibers of wood are imbedded could be dissolved away, leaving the pulp of the wood in just the same condition that the pulp of rags was.

If the resins are not thoroughly dissolved away the paper turns brown

in the course of time. Naturally enough, the wood-pulp makers let the solution of resins run off and become a nuisance, but they too are learning that there are glucoses and pyroligneous acids and all manner of riches to be obtained from the solution of the vegetable matter, to say nothing of the possibilities of a sort of gum or glue which is softened both by heat and by moisture.

And just a word about an economy found necessary by the magazines and newspapers which take back the copies the newspaper dealer does not sell. These "returns" were hard to get rid of. Paper is mean stuff to burn in quantities. So, far as the texture of the wood-pulp paper is concerned, it might be used to print on again, but how are you going to remove the ink? Let the ink stay on and use the pulp over again for pasteboard boxes. And that's what becomes of the newspapers and magazines that nobody buys.

If you will look over journals devoted to concrete and its wonders, you will see a good deal about the concrete made out of slag. And there was a neat little point made when it was discovered that about two cents a pound could be saved in the manufacture of iron by freezing all the moisture out of the atmospheric air before it was heated for the blast. But the best is yet to come. Quite a little bit of money has been made in this country from the manufacture of iron. What do you say to the proposition to make the iron itself a mere by-product to something even more valuable?

From the top of the furnace in which iron ore is liquefying in the fervent heat there rushes out a gas, largely carbon monoxide, whose hunger for oxygen has been only half satisfied. If it could get that other

atom of oxygen it would be a gas that would only smother us when it didn't make the soda-fountain fizz. As it is, carbon monoxide is deadly poison.

It has to be put to some use. It doesn't burn under a boiler very well. It is necessary to keep a bed of coals going so that the furnace gas may stay lighted. But it has been found out that even when it is too poor to keep alight it will explode in the combustion chamber of a gas engine.

It has also been found that a furnace smelting seven tons of pig iron an hour will make enough furnace gas to supply 9,100 horse power per hour.

Deducting gas and power that can

be economically used on the premises, it is estimated that there will be a surplus of power to sell of 5,000 horse-power per hour. Now that we are able to transmit power cheaply by high-tension currents, it is easy to see what this means. In New York they sell electromotive force for from four cents per horse-power per hour up to twelve cents. Call it two cents, and 5,000 horse-power per hour means \$100, which is more money than seven tons of pig iron will bring.

A lot has been done with cog-wheels; a lot is being done with wires; but when it comes to recovering wealth from waste, it is the test-tube that will do it. And so, study chemistry, young man.

A Young Man and His Money

WORLD'S WORK.

How shall I invest my money, is quite as much a problem to the young man who saves ten, fifteen or twenty dollars a week as it is to the older man with thousands to invest. The savings bank, of course, is the usual depository for the young man's funds, but there are other directions as well in which he can safely invest his money with even more satisfactory results.

THERE are many thousands of young men who save from \$5 to \$20 per week. Nine out of every ten of them put this money into a bank, and get on it, at the most, 4 per cent. a year. This habit of saving money is the basis of wealth. It is the small savings of the French people that make France rich, and it was these small savings that brought so quick a recovery from the disasters of the Franco-Prussian War. Similarly, the habit of saving will make the United States a wealthy nation.

A large percentage of those who do not patronize the banks, and perhaps also of those who do, buy from time to time stocks of mining companies,

small venturesome industrial concerns, partnerships in gambling ventures of various sorts. These alleged investments are selected almost at random. A tip from a Wall Street friend, a newspaper story from Nevada, tales of the great wheat fields of the far northwest, are sufficient basis for buying. It need hardly be said that almost ninety out of every hundred dollars risked in this way never come back.

It is the duty of every writer for investors to warn them against such purchases. They are merely blind gambles. Once or twice in a lifetime the gambler "makes good." The other times he helps the promoter to make good. Perhaps he does the

country good, for money is made to circulate, but the average man who saves his \$15 a week is not called upon to practice altruism to this extent.

It is not, however, necessary for the young man with ordinary intelligence to allow his money to lie idle. It can easily be well invested. The popular idea that real investment needs money in large quantities, and that the little man can only gamble in the stock market, is erroneous. There are hundreds of young men in New York City who not only invest their small savings but invest them with wonderful success.

When the late Marshall Field began to accumulate a surplus of cash in the banks, after the Chicago fire, he looked about the country to find a use for it. Among the first things upon which he fell were railroad bonds and stocks. He chose stocks, because he saw that if the country grew, the stocks would get the greater part of the benefit of that growth. He chose the stocks of western railroads, because he believed that the growth of the west would be greater, faster, and even surer than the growth of the east. He bought stock in the Chicago & Northwestern Railroad at less than \$75 per share. At his death he was one of the largest individual owners of that stock, now worth nearly \$250 a share.

That incident may be taken as a text by the young investor with a surplus, no matter how small. It was the same principle that drew Mr. Field into the real estate market in Chicago. He bought nothing that did not appeal to him as full of possibilities. In later years, when his purchases of stocks and bonds for investment were on a tremendous scale, he still adhered to that principle. A young bond salesman for a New York

house interviewed him in the Spring of 1905 with a view to selling him a number of Pennsylvania Railroad guaranteed bonds, yielding a little less than 4 per cent.

"Young man," said Mr. Field, "you are only wasting my time and yours. I like your bonds. When the trustees of my estate come to investing the interest on my investment, I hope they will buy that kind of bonds, but I am a business man, and do not care to put a large part of my surplus in a fully developed property, any more than I should care to buy out a business enterprise that seemed to me to have reached the limit of its growth, no matter how solid it might be. Your bonds are too good for me."

Mr. Field, it will be noted, invested his surplus on the same principle upon which he built up his business, namely, to put the money where it had a chance to grow. The young man can do the same thing. No one will accuse Mr. Field of having been a gambler. Perhaps, of the great American business men of his generation, he was least open to such an accusation. Yet, at his death, he was the owner of many stocks that he had bought in the open markets at a time when ultra-conservative buyers would have classed them as "mere gambles."

Common sense, intelligent reading of current facts, persistent saving, are the sole necessities. Perhaps above all else it is necessary to avoid the tipster. The small investor who buys with the hope of selling again in a month, six months, or even a year is not an investor at all. He is a gambler looking for a gambler's profits. He is not considered here.

The correct principle for such investment as Mr. Field's is found in the economic principle that the peo-

ple keep pace with the nation. As a nation grows rich, its people, its corporations, its industries grow. The young man's investments, if he is wise, will be in companies that have not reached their growth, that are practically only promising prospects, and yet that have in them the elements of solidity and permanence. Common stocks of railroads in good sections, or in new sections; common stocks of great manufacturing companies, new, or but half established, but the business of which is plainly in sight, are proper investments for such a buyer.

It is, perhaps, as well to discard at once the idea of getting any considerable revenue from such investment. The investment is not made for the present, but for the future. To buy stocks or bonds that yield revenue now is to buy securities that represent development; the aim of the young investor should be to discount development — to become a sharer in development. Non-dividend stocks of the railways of the west and the industrial companies are the field.

Granting that the big profits of the future are to be made from stocks in such enterprises, what method should be followed in buying? Here the investor may go utterly wrong, unless he uses the same kind of judgment in buying that he would use in buying real estate or other stable property. No investor can afford to go ahead and buy without using judgment. He may invest on top of a boom that has carried all stocks to abnormal prices just as at the top of a real estate boom, he might buy himself a house at twice the price he would have paid six months before or six months later. It does not take a high order of intelligence to discover, on broad

lines, whether the time is favorable or unfavorable.

There is nothing reckless about the buying of cheap railroad stocks. It is a process of investment that has made the fortunes of thousands of wealthy men throughout the United States and England. It is merely an intelligent method of putting away money not needed in the ordinary course of life. The average young man who has money in the bank does not use the interest he receives on it. He merely lets it lie and accumulate. He is earning his living, and does not need income from investments. He wants to invest his revenue so that when the time comes for him to leave active life, and when he needs income, his principal for investment will be as big as possible. He must, therefore, buy the things that have a future, not those that have a glorious past.

This doctrine will be condemned by many. It will be argued that it is a dangerous doctrine, that it will show great losses at times, that it will lead to speculation. All this is admitted, in a sense. The misuse of such methods, the carrying of stocks on borrowed money, the following of speculative "tips" for a sudden rise, are abuses of this method, not its uses. Used wisely, it is the best and the safest of all investment methods that are designed to increase the principal rather than to yield an income. For the average young man, building up a surplus for himself against the future, it is the only method of investment in securities that is worth practicing.

The fundamental idea under this whole method of investment is that the United States must continue to go forward. Just as the splendid Union Pacific Railroad, the great Baltimore & Ohio, the powerful At-

chison, Topeka & Santa Fe of to-day grew from the receivership period of 1893, so also the tide of national growth will carry forward and upward the railroads whose stocks are

now selling in the world's markets at prices that appear to mean decrepitude. The young man of the day can afford to put his savings behind the great and growing west.

Baedeker, the Greatest of Guide Books

BY JAMES F. MUIRHEAD IN ATLANTIC MONTHLY.

The qualifications necessary for an author to make a successful guide book are many. He has to be not only a traveler but an historian, a botanist, a geologist, a painter, a sculptor and a thousand and one other things. The characteristic of all these people are the ingredients that go to make up the guide book. Baedeker has succeeded by a persistent and painstaking adherence to ascertain facts.

SOMEONE has asserted that Baedeker is the most widely read of living authors; and perhaps this is not so far from the truth when we reflect that he has issued upwards of seventy handbooks, all of which are in constant use. Of these twenty-seven are in German, twenty-four in English, and twenty-two in French. The earliest, was the *Rheinreise*, published in 1828; the very latest is the *Handbook to Constantinople and Asia Minor*, issued just the other day, and not yet translated into English. The task attempted in these seventy volumes is somewhat formidable.

Among the most obvious, the most elementary requirements for the equipment of an ideal editor of guide-books are a knowledge of geography, history, mythology, botany, geology, languages (ancient and modern), painting, sculpture, art, architecture, and archaeology; an acute and discriminating taste; a clear head in foreseeing and explaining the complications of travel; and a sympathetic insight into the needs and desires of the average tourist. The mere enumeration shows how impossible it is for one small head to carry all this load; but it is almost necessary to have at least so much knowledge in

all these branches as will insure sound discrimination among competing authorities.

Baedeker has to know, and know well, the kind of geography that we all learn more or less in our classrooms. It is, however, highly desirable that he should also be familiar with the geography of the world of poesy and romance in which most of us spend so much of our time long after classroom days are over. To many travelers the scene of Poor Jo's death is at least as real as the place where the Little Princes were smothered; and it would be a bold as well as a bad Baedeker who should conduct us through the Trossachs of Scotland without calling up the shades of Ellen and of Roderick Dhu. There are, I verily believe, many travelers to whom Lyme Regis is simply the place where Louisa Elliot sprained her ankle, and not at all the place where the Duke of Monmouth landed before Sedgemoor. The Wessex of Thomas Hardy, the Barchester and Allington of Anthony Trollope, have their devout pilgrims. He who could pilot us safely from point to point in Rosalind's Forest of Arden would probably be hailed with at least as much enthusiasm as he who

guides us through the Ardennes of the seven-day tripper from London; and there ought to be no forgiveness for the guidebook that allows us to pass through Verona without reminding us that it possessed a balcony as well as an amphitheatre. For the maker of guidebooks the opportunity of thus bringing the actual and the fancied worlds into contact is one of the most grateful parts of his task; it affords even him the chance of a glimpse through

"Magic casements, opening on the foam

Of perilous seas, in faery lands forlorn."

In strong distinction to this imaginative realm is the mass of dry practical details about hotels and railways, health and passports, currency and bicycling, that the head of a really adequate Baedeker is bound to contain. He must be familiar with the comparative merits of inns over a great part of the known world. Statistics should be as play to him, and the mysteries of *agio* and exchange should be as clear to him as day. He must be able to discriminate at a glance "between those trains in Bradshaw which start somewhere and get nowhere and those which start nowhere and get somewhere." He must know to a hair's breadth the distance from a German or Russian fortress within which the use of a kodak is as dangerous as a boomerang. He must be able to say whether or no a clinkerpaved road is good for cycling, and that the Swiss passes are closed to automobiles. But it is unnecessary to multiply instances of this kind, which every traveler can supply for himself.

The demands made on the moral side of the ideal Baedeker are no less stringent than those on the intellec-

tual. That a guidebook-writer should hold the scales with absolute evenness between his patron, the tourist, on the one side, and the hosts of landlords, guides, and hirers on the other may be assumed as obvious. That the actual Baedeker has attained a fair measure of impartiality may be inferred from the witness of generations of tourists, and from such epithets as "abnormally neutral," "bloodless," "wooden" and "stony" flung at him by the rising gorge of the partial natural man. Baedeker stands before the footlights not to express emotions, but to chronicle facts; the fierce light that beats upon his head would soon shrivel any tendency to favoritism. It is possible, however, that even Baedeker might enjoy a fuller expression of his own personality, and that, if he has had success in attaining a somewhat colorless catholicity of taste and interest, it has been the result of carefully disciplined effort toward a judicially selected goal.

Herbert Spencer relates in his Autobiography how near he came to serious disaster on a long and solitary walk in the Scottish Highlands, owing to the imperfection of the map to which he trusted for guidance. He then opines, with characteristic love of generalization, "that from time to time lives are lost, and every year many illnesses caused by the misdirection" of guidebooks. While hoping that Spencer took a needlessly gloomy view, we must admit that a profound sense of responsibility is another essential of the guidebook-maker as he should be. I have no hesitation in claiming this quality for Baedeker. He is, for example, keenly aware of the difference between feats that may fairly be attempted with a good guidebook, good health, and good weather, and those which cry imperatively for local knowledge and a living guide.

If the carriers of the little red-garbed books ever come to grief on the mountains, it is probably because they have neglected, if not the Baedekerian shout of "guide indispensable," then at least the Baedekerian whisper of "guide desirable." Indeed, in the sphere of responsibility, Baedeker is possibly open to the charge of taking himself almost too seriously, and of assuming that every traveler will do exactly as he is told. Even in the matter of sea-bathing, he is careful to impose on his Teutonic reader the rule of "three dips and out," though this somewhat grandmotherly attitude is not always extended to his British and American clients. Baedeker's sense of responsibility is, of course, manifest in the mass of small details he offers for the traveler's use in every imaginable contingency; and for those behind the scenes it is visible in the mountain of at least equal bulk heaped up of siftings and rejections. Another manifestation of the seriousness with which Baedeker faces his task is his liberal recourse to weighty authorities in the preparation of his handbooks. He does not venture to impose his own tastes in art, his own rules of health, his own ideas of science on the unsuspecting traveler; but tries to secure in each case the co-operation of leading specialists and recognized authorities.

Baedeker must be at once scholar and sportsman, bon-vivant and botanist, archaeologist and theatre-goer. He must at one time shiver with the novice on the brink of the most insignificant precipice; at another he must stand steady-headed on the loftiest peaks along with the fearsome race of "adepts" who stalk through his Switzerland and Eastern Alps. In a book intended for the seafaring Briton he must not be overawed by the fact that there are sixty-eight steam-

ers in the merchant fleet of Belgium, nor must he expect a resident of the Rocky Mountains to grow dizzy at sight of the sandhills of Vrouwenheide, the highest point in Holland. The German professor must not be allowed to stumble on a sentence mentioning Noah Porter of Yale in the same breath with Kant or Hegel; and a chastening memory of Lincoln and Chartres must control the description of the cathedral of Albany, New York. The ideal Baedeker must never mistake geese—scenic, historical, literary, or otherwise—for swans. He must be at once a student of nature, of art, and of man. His sense of proportion should amount to an artistic gift.

In going on now to give a few lines about the actual *modus operandi* in the production of a guidebook, it is, perhaps, not letting too large a cat out of the bag to say that each successive head of the multiple personality known as Baedeker has regarded himself as an author as well as a publisher, and has looked for his reward in reputation as much as in pelf. To be styled the "King of Guidebook Makers" by an important authority excites, perhaps, as pleasant a throb as an increasing sale; and certain volumes have been issued rather from a desire of rounding out the series than from any hope of gain. It is highly probable that no other firm could show so inverted a ratio of reputation and revenue as that of Karl Baedeker. Few books, other than elaborate editions de luxe, can be so expensive to produce as the modest little red handbooks of Baedeker. To begin with, they are not stereotyped, but are kept permanently standing in type—a locking up of capital of which every expert will recognize the significance. The object of this is to reduce to a minimum the temptation

of letting a thing stand "because it is there." Practically the smallest shadow of an excuse for a change is seized upon. If it has been ascertained since the last edition that ten per cent. more tourists now travel from B to A instead of from A to B, this is enough to make the almost quixotic Baedekerian pen turn the route round and rewrite it from beginning to end. Baedeker's rule of refusing all advertisements is well known. The object of this is not only to avoid any suspicion of partiality—conscious or unconscious—to the hotel that pays for a long advertisement, but also to insure that the book will always depend for its profits on its freshness and other merits, and not in any degree on the returns of advertisements. Another reason is to diminish the bulk of the volume, and so avoid the course which makes the ordinary American magazine a weariness of the flesh, whatever it may be to the spirit. The maps and plans are another source of expense, as are likewise the monographs by special writers and the traveling expenses of the editors. The short life of each new edition also differentiates the Baedekers from other successful books, where the rate of profit increases with the increase of sale. This is true of the Baedekers to a limited extent only. After a few years at most each handbook is so thoroughly overhauled as to be practically a new book both in form and cost of production. I should gladly give any one a dollar for every unaltered page in a new edition of Baedeker who would give me a cent for each page containing a change. A guidebook is a book that, from the necessity of the case, is always in the making, and never made. It can never be laid aside as done, with nothing more to do but to sell. Hence, small impressions, constant correc-

tions, and fast-following new editions are indispensable for worthy achievement.

It is, of course, well known that the term Baedeker, as generally used, covers the work of a number of different editors and contributors, whose names are not always mentioned. That this is an inevitable and perfectly just arrangement—a fair application of the dictum "*qui facit per alium facit per se*"—seems clear to me, mainly on these grounds: (1) the whole scheme of the books, the framework which the various editors have to fill in, was the invention and device of the elder Baedeker; (2) the head of the firm continues to take a personal and intelligent interest in the preparation of every handbook in the series; and (3) the share played by the publishers' capital, in facilitating travel and investigation, furnishes the actual writer with a large proportion of his material. Half the work is really done before the editors touch the pens. The various individual editors have a chance to exercise a good deal of art in conforming to the uniform style of the handbooks; and that this is not, perhaps, so easy as it looks has been borne witness to by the perennial difficulty of getting usable matter from outsiders, even of wide cultivation and considerable literary gift. I do not believe any editor has more trouble in recasting his "copy" than the editor of a really carefully prepared guidebook. There is no field in which the need of *le mot juste* is more imperatively indicated.

The composite photograph labeled Baedeker, however, takes in more than the editorial staff—it also includes many of the travelers who use the handbooks; the reader of to-day becomes one of the authors of tomorrow. A good guidebook does not

spring, like Minerva, fully grown from the head of its parent. Unlike a poet, it is not born, but "becomes;" like a snow-ball, *erescit eundo*. It is open to question whether a combination of the largest capital and the most brilliant genius could produce, at the first go-off, so good a guide-book for any country as one backed by much more slender resources, which has yet enjoyed the voluntary co-operation of travelers through various successive editions. The data sent to Baedeker vary from recommendations of some particularly plump headwaiter up to corrections on important points of scholarship and fact, and highly valuable suggestions for improvement. One laborious gentleman, I remember, not content with our already voluminous index of four or five thousand entries, sent us a complete new index with more than twice as many. On the whole, however, the help offered by travelers is as satisfactory in quality as it is bulky in quantity; and almost the first thing to be done in preparing a new edition is a careful examination of the letters in the pigeon-hole of the particular hand-book under treatment. Actual cases of misinformation from this source are rare; but the editor must be on his guard against the unintentional bias of letters due to the exceptionally good or bad treatment of the writer, and he must be still more careful to detect bogus or interested letters, and to discount the self-praise of hotel-keepers and the like. The pessimist should take note that we receive at least as many letters of praise as of blame; the chronic grumbler is not more in evidence than

the traveler of content. After the letters of travelers comes an equally careful study of newspaper cuttings, census bulletins, railway literature, annual reports of all kinds, magazine articles, and topographical works that have appeared since the last edition of the handbook. This done, the editor is ready to take to the road and collect his own material on the spot. It is, of course, impracticable for him to travel over a whole country for each new issue, though this is indispensable in preparing a first edition; but he can at least visit that section which seems to have undergone most change, and so manage to go over the whole ground again in the course of a few years. For the parts he does not visit he receives his information by deputy or from local residents; and it is an unusually easy job that does not involve in this way the writing of hundreds of letters, and the asking of thousands of questions.

All the mechanical work of the Baedeker handbooks, including the printing, map-making, and binding, is done in Germany, most of it in Leipzig, where the firm has been established since 1872. Before that its seat was at Coblenz. The connection of the Baedeker family with the book-trade goes back to Diederich Baedeker, who died at Bielefeld in 1716 as *königlich-preussischer privilegierter Buchdrucker*. Since his day there has been an unbroken line of printing or publishing Baedekers, forming a good example of that honorable commercial heredity so difficult to parallel out of Germany.

The Policy of the British Labor Party

BY WILLIAM DIACK IN THE ARENA.

Naturally, considerable interest has been centred on the labor party which won so marked a success in the recent British elections and a statement of the aims and aspirations of that body as expressed by one of its members will prove of interest.

FROM the progressive standpoint the chief feature of the recent British election has been the success of the candidates of the Labor Representation Committee—the L. R. C., as it is familiarly termed; and a brief statement of the programme, composition and policy of this organization may be of interest to American readers. It is no body of mushroom growth, but one that has been built up slowly, year by year with much shrewd foresight, so as to include in its ranks the best elements in the trades union and progressive working class movements. It is a federation composed of trades unions, trades councils, Socialist societies, and co-operative societies willing to join and considered eligible for membership. Its object is: "To secure by united action the election to Parliament of candidates promoted in the first instance by an affiliated society or societies in the constituencies who undertake to form or join a distinct group in Parliament, with its own whips and its own policy on labor questions, to abstain strictly from identifying themselves with, or promoting the interests of, any section of the Liberal or Conservative parties, and not to oppose any other candidates recognized by this committee. All such candidates shall pledge themselves to accept this constitution, to abide by the decision of the group, and to appear before their constituencies under the title of labor candidates only."

The affairs of the Labor Representation Committee are transacted

by an executive committee of thirteen members (and the number has not proved unlucky so far as the recent elections have been concerned). Of these, nine represent the trades unions, three the Socialist societies, and one the trades councils. The committee has a membership of 1,000,000 and it is the proud boast of its leaders that the working classes of Britain are now in a position to maintain 200 of their number in Parliament. A party fund has been established in order to assist in defraying the election expenses of the candidates and in contributing to the support of those who may be successful at the polls. According to the present arrangements the L. R. C. pays 25 per cent. of the returning officers' expenses of approved candidates and £200 per annum towards maintenance of such candidates who are elected to Parliament. At present a levy of one penny per annum is paid by all the affiliated trade unions, but even this trifling sum represents an annual income of considerably over £4,000 a year.

The Labor Representation Committee was originally a sort of offshoot from the Trades Congress, and was founded in 1899. Its present chairman is Mr. Arthur Henderson, who has been returned as labor M.P. for one of the divisions of Durham. Mr. J. R. Macdonald was appointed its first secretary, and he has been at the helm of affairs ever since. It is to Mr. Macdonald more than to any other single individual that the new party owes so much of its success at the elections. This Scharnhorst of

the labor party, as he has been called, is a native of Lossiemouth, a little fishing village on the coast of Morayshire, and is sprung from the sturdy race of peasants who have done so much to make Scotland great at home and revered abroad—to alter slightly the well known words of Burns.

The political programme of the new party is in many respects frankly socialistic. Of the 29 L.R.C. members, 21 are Socialists, 7 of these being active workers in the Independent Labor Party. So also is one of the best known of the new miners' members of Parliament, while—apart from Mr. John Burns—at least half a dozen well known Socialist workers are included in the Liberal Labor group. In most of the election addresses of the labor members the nationalization of the land, railways, canals and mines figured prominently; while several were bold enough to add the whole "means of production, distribution and exchange." The gravity of the unemployed problem was fully recognized. The "right to work" — although the phrase and the principle which it embodied were jeered at by official Liberalism—was a battle cry which found a responsive echo in the hearts of hundreds of thousands of British workmen. The duty of the state to provide work for those who are willing to work and cannot find it was boldly insisted on, this new conception of the meaning of citizenship being strenuously advocated even by those of the old school of trades unionists who repudiated all sympathy with the Socialism of Mr. Keir Hardie and the Independent Labor Party. Farm colonies, afforestation, reclamation of foreshores and waste lands, a reduction of the hours of labor (in most of the addresses an eight-hour day was proposed), reform

of the land laws and the granting of wider powers to municipalities were among the numerous solutions put forward for the great problem of non-employment.

The working class candidates — whether labor or Liberal labor—were free traders to a man. "Thou shalt not tax the people's food" has been the verdict of the working classes on Mr. Chamberlain's protectionist nostrums. With regard to Chinese labor in South Africa, too, they spoke with undivided voice. "Remove the stain" —Mr. J. R. Macdonald's expressive phrase—sums up the attitude, not of the labor members only, but of the whole British democracy on this important question.

But the first place in the labor programme is naturally occupied by the Amendment of the Workmen's Compensation Act and the law relating to trades unions. By the Taft-Vale and other well known judicial decisions the accumulated funds of the British trades unions have been practically placed at the mercy of unscrupulous organizations of employes, and tens of thousands of pounds have already been swallowed up in fruitless litigation. A bill to amend this state of matters—the Trades Disputes Bill — passed its second reading by a large majority last session of Parliament, but was killed in committee by an organized capitalist opposition. To the passing of this bill the new labor party will first devote its energies in the new Parliament, and the Liberal Government has pledged itself to make at least considerable concessions in this direction.

Mr. J. Keir Hardie, although perhaps more advanced than some of his colleagues, is still perhaps entitled to speak with more authority on the objects of the labor party than any other single member who could

be selected. He has had considerable Parliamentary experience. His zeal, energy and ability are undoubted. Even his political opponents cordially recognize his manly and upright character and his sincerity of purpose. The worst they have to say of him is that he is something of a visionary and an idealist. But even in politics that is a failing which leans to virtue's side. It is an evil omen for a nation when its young men dream no dreams and its old men cease to see visions. Mr. Hardie's address to the electors of Merthyr Tydvil (from which constituency he has been elected in spite of much strenuous opposition, by a magnificent vote of over 10,000) may therefore be taken as fairly representative of the aims and aspirations of the labor party as a whole, and on that account we quote from it some characteristic paragraphs :

"As a democrat, I am opposed to every form of hereditary rule, and in favor of conferring full and unfettered powers upon the common people. In this connection I include women as well as men.

"As religious belief is a personal concern, I am opposed to its enforcement or endowment by the state — either in church or school. Every school which is being supported by public money should be under public control, and the teachers, as civil servants, should be freed from the responsibility of giving religious instruction. Education being a national concern, the cost should be borne by the national exchequer.

"As a convinced free trader, I am opposed to any flirting with protection, whether disguised as preferential tariffs or a zollverein, or retaliation, or any of the many aliases under which it is proposed to foist protection upon the nation. I would

abolish the customs house altogether, and do away with all forms of indirect taxation, save the excise duties upon spirits ; repeal the coal tax, denounce the sugar convention, and make good the loss to the revenue by a special graduated tax on unearned incomes.

"It is as a socialist, a trades unionist, and a social reformer that I base my chief claim to your support. The working class, professional men, and shopkeepers are all struggling — some few to make a competence, but the great majority to earn a livelihood. Millions are steeped in poverty, whilst millions more are but one degree removed from it. While the useful classes toil and suffer, the owners of land and capital, and the schemers and gamblers of the stock exchange, are heaping up untold wealth. Whilst the poor die for lack of the barest necessities of life, the rich revel in a riot of excess. Great accumulations of wealth menace our liberties, control the great London organs of the press, lead us into wars abroad, and poison the wells of public life at home. Landlordism and capitalism are the upper and nether millstones between which the life of the common people is being ground to dust.

"It was a contemplation of these things which led me to become a Socialist, and to take an active part in building up a labor party separate and distinct from all other parties ; and it is for the electors of Merthyr to say by their votes how far they are in agreement with me. My one object in politics is to aid in creating the public opinion which will sweep away the causes which produce poverty, vice, crime, drunkenness and immorality, and introduce an era of freedom, fraternity and equality. This ideal state cannot be reached at one

step, but much can be done to mitigate some of the graver evils arising out of our present system of wealth production. The immediate object of the labor party is to create a driving force in politics which will overcome the inertia of politicians in regard to social reforms, and give the nation a strong, true lead along the paths which make for national righteousness. To see that children are properly fed and cared for, that the able are given an opportunity to work, and that comfort is brought into the life of the aged, are objects worth striving for. These things lie outside the domain of ordinary party politics but they must be attended to if the nation is to be saved from decay; and should I again be returned as your representative, it will be my

main concern to see that they are attended to."

Such, then, are the men and such the principles of the new party which has come into prominence at the general election in Britain. Carpenters, masons, compositors, shipwrights, farm laborers, miners, engineers, gas-workers, railway servants, ex-civil-servants, shoemakers, navvies and weavers—these are the men whom the labor party has chosen to testify in Parliament to the principles of the new democracy. The working class electors have approved of this choice, and the future of the labor party in Britain depends very largely now on the record and achievements of its members in Parliament during the next five years. "The young fellows must prepare to do credit to this destiny, for the stuff is in them."

The Work of the New York Post Office

BY LOUIS E. VAN-NORMAN IN REVIEW OF REVIEWS.

As the distributing centre for nearly all the European mail that comes to America, New York occupies a position of importance in the world's postal system. The method of handling incoming mail is described and a comparison is made between the efficiency of the New York office and those of Paris, Berlin and London.

NEW YORK is the main gateway to the United States, and the New York Postoffice is the national mail funnel. The bulk of the Canadian foreign mail—incoming and outgoing—passes through New York and is handled—in bags—by the New York Post Office. When Europeans write to Australasian points, almost all their letters pass, in bulk, through New York and are dispatched, via our trancontinental railroads, through San Francisco, to their destinations. Much of the European mail for the Far East, for Mexico, and for South America finds that the

American metropolis marks one stage of its journey.

In order to save for the European mail the time lost by the incoming transatlantic liners in coming up New York Bay and worrying through the formalities of docking and passing customs officials, every steamer carrying mail is met at Quarantine by the boat of the New York Post Office, which bears the appropriate title of the Postmaster-General.

Most of the mail comes on the English liners (the Cunard and the White Star). A good deal, however, is brought by the Hamburg-American

and North German Lloyd boats, and some by the American, French, and Italian lines. An average mail consists of from 2,000 to 2,500 bags, each of which contains from 500 to 6,000 "pieces." A large mail would consist of more than 3,000 bags, the largest every received being 3,470. As soon as the mail-carrying steamer leaves the other side, a cable notice is sent to the New York Post Office stating the number of bags she carries. The postal boat meets her at Quarantine, after having been notified of the time of her arrival at Sandv Hook. Coming alongside of the ocean greyhound at the same time as the doctor and the revenue cutter (which is usually the case), the liner stops, and the mail is transferred through a large canvas chute, the capacity of the Postmaster-General being 4,000 bags. A clerk on the ship "tallies out," while an employe of the New York postal boat "tallies in." When reckonings agree, receipt is exchanged. Sometimes, if the liner is late and the quarantine and Government officials have already been satisfied, the big ship and the postal boat, lashed together, proceed up the bay under half speed, transferring mail as they go.

The postal boat meets, on an average, six steamers a week. The English, German and American liners have what is known as the seaport service, by which English, German and American clerks sort the mail during the voyage, so that when the bags arrive at New York they already contain the distributed mail in proper shape for dispatch via the different railroads, or for the last stage of their journey over another steamship line. As the bags drop into the postal boat they are sorted into groups, so that when the Postmaster-General reaches its dock these bags are arranged in different piles

—one for the Pennsylvania Railroad, destined for the West, Southwest and South; another for the Grand Central Station, destined for the West, Northwest, Canada and trans-Pacific points; and still another for local city distribution. Even though the great liner usually beats the postal boat to the dock, it is found that the little vessel saves from two to fifteen hours in the dispatch of mails. She has no docking or customs formalities to go through, and even the gain of an hour at the dock (whence the mail is carried on wagons to the General Post Office) may mean a gain of from two to twelve hours in the transcontinental distribution. A specific example of the speed with which mail is transferred from a big liner is furnished by the case of the White Star steamer *Baltic*, on March 9.

The postal boat met the liner at Quarantine at 7.20 a.m. By 9.30—two hours and ten minutes—all the mails, consisting of 2,870 bags, had been taken off and the seven miles to the dock (Pier 13, North River) covered. An analysis of this mail showed that eighteen large double van loads, consisting of 1,354 bags, were sent to the General Post Office in one hour and fifty minutes, consuming about five and one-half minutes per load. All of these bags had to be opened and the contents distributed for final dispatch. Nine large double vans were sent direct to the Grand Central Station with 880 bags for dispatch by trains via the New York Central and the New Haven railroads. One hundred and seventy-eight bags were sent in one large van to the Foreign Branch Station, with transit mails. The mail boat then proceeded to the Pennsylvania depot, Jersey City, where 458 sacks were unloaded for dispatch by trains over that road. The entire

transfer of 2,870 bags consumed four hours and forty minutes, requiring 28 vans in New York, and the equivalent of six in Jersey City, making a total of 34 large double vans to effect the entire transfer.

How does the New York Post Office compare in efficiency and amount of work accomplished with the post offices of the large capitals of the world? A careful examination of the equipment and operation in the three great capitals of the Old World—London, Paris and Berlin—is encouraging to the New Yorker in many respects, and somewhat discouraging in others. The efficiency of postal facilities is, beyond a doubt, dependent upon the rapidity of communication attainable within the city. The speed of incoming trains and vessels is a fixed quantity, and must be reckoned with as such by the metropolitan office. The problem is to reach the local centres of distribution quickly. One of the largest, not the largest, factor in communication is, of course, the topographical one. Each city has its own problems, determined by its location area, nearness to water, railroad communication, and other factors. Taking into account all of these, and admitting the excellence of our New York service in many respects, it must still be confessed that, measured by the test of speed in actual delivery, New York has some things to learn from the three European capitals. By the development of the pneumatic tube in the two Continental cities, it is possible to send a card (known as a "petite bleue" in Paris, and as a "postkarte" in Berlin) from almost any portion of the city to any other portion in less than an hour. That this is not possible in New York does not need statement.

It is comforting, however, to realize that there is nothing in the actual conditions or postal machinery in New York that cannot be developed so as to realize the best possible speed in mail transportation and delivery. We undoubtedly have the best system and methods. We need a fuller application and development of them. On the European continent, the idea of centralization is evident in the post office, as it is in all governmental units. This results, in Paris, in a great congestion at the central office and some peculiar anomalies of distribution that seem almost medieval to Americans. Take, for example, the distribution of mail from the central office. Carriers are transported in buses from the central portion of that section of the metropolitan district in which they are to begin distribution. Instead of this, both London and New York have the branch or sub-station idea highly developed.

The London Post Office is, all things considered, probably the most admirably managed and efficient postal institution in the world. The London postal district, which takes in all the territory within a circle extending in all directions eight or nine miles from St. Martins Le Grand (the general post office, at Cheapside, near Ludgate Hill), is inhabited by nearly seven million people. This area is divided first into postal districts and again into sub-districts. Of these sub-districts, which correspond nearly to our branch post offices, there are one hundred. In these, the collections and deliveries range (according to the density of population) from five collections and three deliveries a day to twenty-one collections and twelve deliveries every twenty-four hours. The minimum number of collections

and deliveries is in the district known as the Hyde, which includes Kingsbury; the maximum is in the highly congested eastern district of the old city, extending from Grays Inn Road to Bishopsgate Street, and from the City Road to the Thames. In this latter district there are collections beginning at 5.30 a.m., and then almost half-hourly until 8 p.m. The deliveries of letters are at 7.15, 8.30, 10.30; then hourly, at quarter-past, until 6.15, the last delivery being at 8.30 in the evening. Parcels (in which term is included newspapers) are delivered at 8.15 11.30, 2, 4.30 and 7.

This great frequency of collections and deliveries is significant in the London postal service. By this frequency, even though the British capital is as yet without the pneumatic tube system, and by the constant, unending stream of wagons bringing in the mail from the outlying districts, Londoners are served with a promptness and with a regularity and method that make it possible to calculate almost exactly the time necessary for the transit of a letter from any one point to any other point in the city. The London postal system, in common with that of New York, treats the district or branch offices as though they were separate cities. This enables the sub-stations to deal with other sub-stations in the same district without passing through the general office, a facility not possible under the Paris system.

Of course, the London postman

has duties which are unknown to his American brother. The post office of the British capital, in addition to its purely postal functions, does a telegraph, parcels post, savings bank, and insurance business. The London collector and carrier, also, has his salary graded more scientifically than that of the New York carrier, and, when everything is considered, he is better paid. The salaries of London carriers vary according to the density of population in which the service is rendered, the assumption being that the cost of living should be the largest determining factor in the amount of money earned. If the carrier lives in a densely populated city district, it costs him very much more to live than if his home is, for example, at Wimbledon. Furthermore if he works in the city district but lives at Wimbledon, he must consider his car fare to and from his work. In the East City, in which district the central office is located, carriers begin at 20 shillings and sixpence per week (approximately \$5.00), and they may advance to thirty-four shillings (approximately \$8.50). In the farthest outlying districts, the carrier begins at 18 shillings and sixpence (approximately \$4.75), and may in a few years receive 28 shillings (or \$7). Considering, the difference in the standard of living, this compares very well with the New York postman's income, which is \$600 for the first year, and which may eventually reach the maximum of \$1,000.

The Future of Hudson Bay

BY FRANK G. CARPENTER IN HERALD MAGAZINE.

The vast inland sea, which is one-sixth as large as the United States is still practically unknown. But several railroads are being planned to reach its shores and soon its possibilities will become fully known. As the shortest route to Europe, it will probably be utilized for the rapid carriage of the wheat of the Northwest across the Atlantic

HUDSON BAY is so far north on the globe that the distance between it and Liverpool is remarkably short. It is only about two thousand miles from Fort Churchill to Port Simpson, and if a railroad should be built the Hudson Bay route would be by far the shortest from Asia to Europe and very much shorter from parts of the United States to Europe than the routes now used. The distance from Winnipeg via Hudson Bay to Liverpool is 6,000 miles, whereas by Montreal it is 4,228 miles. From Duluth to Liverpool via Hudson Bay is 3,728 miles and from the same point by way of New York is 4,200 miles. When this route is opened passengers from St. Paul and Minneapolis can go to Great Britain by traveling 4,100 miles, and they will save a railroad journey of at least five or six hundred miles. The distance from Vancouver to Liverpool by Hudson Bay will be 1,300 miles shorter than it is now by the Canadian Pacific Railroad, and passengers from all parts of our great West will be able to go quicker and with a shorter rail journey by that way.

The great advantage of this new commercial highway will be in the transportation of grain and other freight. It will bring the wheat of the new northwest a thousand miles nearer salt water. We produced last year something like 700,000,000 bushels of wheat. It is not extravagant to believe that the great grain belt of the British Northwest will produce as much at some time in the

future. Its yield last year was about a hundred million bushels, and not one-fiftieth of the land is under cultivation. If the wheat can be transported by way of Hudson Bay it is said that the saving might be as much as fifteen cents per bushel, and this on a hundred million bushel crop would mean a saving of \$15,000,000 per annum. Is it any wonder that the possibility of the route is seriously considered?

In addition to grain would be the enormous supplies which will be needed for the British Northwest. This country will eventually support about twenty million people, and they will be among the best customers on the globe. The port would also take away freight from and supply goods direct to the United States. It would be especially valuable in the shipping of live stock, as the climate is cool and the sea voyage short.

There has in the past been a strong opposition to all schemes for the utilization of Hudson Bay. A great secrecy has been preserved about the bay and strangers have been kept from exploring it. There have been two corporations especially interested in this matter. One was the Hudson Bay Company and the other the Canadian Pacific Railway. The Hudson Bay Company were anxious to keep matters quiet because they were getting half a million dollars' worth of furs out of this region, which they had monopolized for two hundred years. The Canadian Pacific people knew that if wheat and other freight could be sent via Hud-

son Bay to England their long freight line across the continent would lack traffic. And therefore both were interested in keeping the conditions as they were.

As to the possibilities of navigation, these can only be tested by experiment. There is no doubt that ships can go in and out of this great inland waterway during a part of the year. The Hudson Bay Company sailing vessels have been doing so for 274 years. In that time they have had in operation seven hundred and fifty vessels, ranging in size from seventy tons to small boats, and so far they have lost only two.

The difficulty of navigating Hudson Bay lies not in the bay itself, but in Hudson Strait, which leads into it. Hudson Bay, as I am told, is never frozen. It is like a great ocean, and some short distance from the shore is open all the year around. It is an enormous body of water. It is 1,300 miles long and 1,600 miles wide and its area is one-sixth as big as the whole United States. It has by far the largest drainage basin of all British America. Some of its waters come from the Rocky Mountains, some from Labrador and some from the height of land on the other side of which the waters flow to the great lakes and the Gulf of Mexico. The basin includes about three million square miles.

Hudson Bay has icebergs and ice floes, but its waters are deep, and it has some good harbors. One of the best harbors is Fort Churchill, and it has been picked out as the port for the probable railroads. It will be the best place to reach Winnipeg, the total distance between the two points being about as great as between New York and Pittsburg. A railroad could easily be built along the route, and it is said that much of

the land through which it would go is suitable for vegetable raising and small farms.

The greatest dangers of the Hudson Bay route lie in Hudson Strait, which forms the entrance to Hudson Bay. It is five or six hundred miles long and about 100 miles wide, opening out into the Atlantic a little below the end of Greenland. It is right in the track of the great icebergs and ice floes which come down through Baffin Bay and Davis Strait from the Arctic Ocean, and which are liable to be blown into Hudson Strait by the winds. Just as the shores of Ireland, England and the northern part of the European continent are warmed by the Gulf Stream, so the regions here are cooled by the cold Arctic waters and these icebergs and seas of floating ice. They make Hudson Strait colder than it would otherwise be, and this is added to by the winds from the Atlantic, which blow in the icebergs broken off of the shores of Greenland.

From the middle of October until June this strait is sure to get full of ice; at least it will not be safe to go through it at such times. Captain Wakeman, who was sent by the Dominion Government here to investigate its navigation a few years ago, reported that the strait was blocked for about 250 miles from the 23rd of June to the 8th of July. The jam consisted of heavy ice in sheets which had drifted one sheet on top of another and jammed up in such a way that a heavily laden vessel could not possibly have gone through it. The sheets were from three to thirty inches thick. Shortly after this time the ice broke and passed away, and the straits were open for the next three months. Captain Wakeman estimated that the open season would be three and a half or four months.

Dr. Bell, of the Canadian Geological Survey, says it is not safe to rely on Hudson Strait being open later than the first week in October, and Captain Gordon, who commanded one of the exploring parties, says that vessels especially constructed for the purpose will have to be used and that they should not be of more than two thousand tons. They should be fortified against the ice and have small propellers well down in the water. It would take a vast number of such steamers to handle the Canadian wheat crop, and unless great whalebacks or the modern grain steamers can be used for the traffic it would hardly pay as a grain route.

One hope of those who advocate the building of the railroads to Hudson Bay is that some arrangements will be made by means of ice breakers or other methods by which the ordinary tramp steamer can go in and out of Hudson Strait. If this is possible the ships that are used for the grain and freight traffic between Hudson Bay and England during the open season can be turned to some other use for the rest of the year. If this is not done the ships will work at a dead loss for nine months of each year, which will, of course, materially increase the freight charges. So far, however, comparatively little is known about the bay and the strait, and it is not safe to risk prophesying as to the future.

I hear much about the fisheries of Hudson Bay. Captain Hall, one of the Hudson Bay traders, tells me that the stories concerning their value are overdrawn; but the explorers sent by the Government and the vast amount of whale oil and other products brought out by the fishermen, lead one to suppose them about the most valuable on the continent. A large

amount of the whaling has been done by Americans from Bedford, Mass. These men go through the strait and winter at Marble Island, in Hudson Bay, near the west coast. They spend one season harpooning whales and buying furs and fish, taking their cargoes out the following year. Among the whales caught are the bowheads, which produce some of the finest whalebone known to the world. A full grown whale will yield about fifteen hundred pounds of bone, and, as the whalebone sells for \$14,000 a ton, a whale of that kind brings in bone about \$10,500. In addition to this the oil of the whale is valuable, so that a single whale may yield \$20,000. Our statistics show that our whale fisheries there have already realized in ten years \$1,371,000. There were fifty voyages in that period, the average voyage realizing more than \$27,000.

The most of the whale fishing is from Marble Island. It begins as soon as the ice breaks in the spring and continues until navigation closes. The whales are black ones, many of them eighty or ninety feet long, or big enough to fill a good sized city lot. In addition there are white whales about fourteen feet long. These great fish swim about in shoals so large that they cover parts of the bay like sheets of snow. They are valuable for both their oil and hides.

Another important industry of Hudson Bay is walrus fishing. These animals are caught for their hides, which are used for making belts. A good sized hide will weigh three hundred pounds and will sell for ten cents a pound. The tusks of the walrus are also valuable, bringing about \$10 each.

In addition to the great sea animals there are flipper seals, porpoises and narwhales, which are caught for their

oil and hides, and there are also schools of cod, white fish, pickerel and halibut, as well as salmon and graylings. The cod fisheries are largely in Hudson Strait.

Hudson Bay is the Summer home of the wild goose. The marshy lands along its shore grow wild rice, which forms its favorite food, and the geese come there by the millions. The Hudson Bay men tell me the hunters use old fashioned guns loaded with small shot which spreads so that it is not uncommon to kill twenty geese with one discharge. The flesh of the wild fowl takes the place of pork at the Hudson Bay posts. It is dried and salted and during the winter it forms a large part of the diet of the traders. At this time they

live almost entirely on meat, and it is not uncommon for one man to eat a whole goose at a meal.

It is from Hudson Bay that the quill pens of England still come, and this region for generations furnished the most of the pens of Europe. Quills are still used in English Government offices as well as in the Houses of Parliament, and it was with a Hudson Bay quill that King Edward signed his coronation oath. The gathering of the quills has been always done by the Hudson Bay Company, which has shipped as many as ten tons of wild goose feathers in a single year. Only three ounces of such feathers can be got from one bird, and it required 120,000 geese to furnish those quills.

Miss Ellen Terry's Jubilee

BY S. R. L. IN LONDON CHRONICLE.

Ellen Terry's stage jubilee, which has just been celebrated in so happy a manner, has brought that wonderful actress into renewed prominence. Her fame rests partially on her long association with Irving, but none the less her own merits have won for her a well-deserved meed of praise.

‘**T**HEN a star danced, and under that was I born.” So came the immortal confession from the lips of Shakespeare's own Beatrice. With it, one fancies, will live henceforward forever the image, the name, the art of Ellen Terry. The lovely old line is hackneyed enough. There is hardly a light-hearted actress who would not fain claim it for horoscope. But it belongs to Ellen Terry now, as unchallengeably as it once belonged to Beatrice herself. It is a little golden heritage, bequeathed to her, and her alone, across three centuries of English womanhood.

Faith! how else should one explain or even describe the charm,

the inspiration, of the wonderful woman whose stage jubilee has just been honored, with such happy tribute? Truth to tell, it would be hardly flattery—it would hardly be even fair—to Miss Ellen Terry to contend that she is our representative English actress. Indeed, when one thinks of the characteristic English temperament, and then thinks of the stage, they by no means hit off Ellen Terry between them. There is still an element of primness, of quiet substantiality, about the typical Englishwoman that is far more suggestive of Mrs. Kendal. As for the stage and its traditions, the old terrific tragic way—the Siddons way,

that Ellen Terry never loved—is still probably the greatest way of all, if only we had actresses mighty enough to walk therein.

No, this gleam of spring sunshine, this vision of April womanhood, this bright being, tingling with impulse, with merriment, with sympathy, with instinct for art, that we think of when we talk of Ellen Terry must be alone in theatrical history. There has never, certainly, been an actress like her. There cannot be one in the future—at any rate, in the near future—for the simple reason that she has been the product of a set of circumstances almost as unrecurring, in their smaller way, as the great Renaissance that produced Shakespeare.

She is, in short, the most precious living fruit of that national blossoming that we call the aesthetic movement. Out of the Mid-Victorian world of gloom and commonplace and ugliness, there came the great pageant of color and of nature. At the heart of it was Ellen Terry. Everyone knows with what masterly foresight Sir Henry Irving swept the whole movement into the service of his own art, and made the Lyceum its temple. He practically did that when he brought Ellen Terry—the already delightful Olivia in “The Vicar of Wakefield” over from the little Court Theatre, where she is, curiously enough, playing at this moment, and enthroned her with himself at the Lyceum.

From that time forward the tradition of the Lyceum was assured. Sir Henry Irving would undoubtedly have been a great actor, anyhow—and a great man. He would have made the name of the Lyceum memorable. One cannot help thinking, however, how very much grimmer a place it would have been in its whole atmosphere without Ellen Terry.

“Hamlet” and “The Bells” were all very well. The ghastly and the sublime were alike within the grasp of Sir Henry Irving’s marvellous imagination. But one doubts very much if all the poetry, all the romance, all the color, all the mystic glamor which that old green curtain used to disclose, would have been there in half so wonderful a degree if Ellen Terry had not brought, as she did, the whole artistic, aesthetic world to her feet in Wellington street.

Somehow or other, she represented in her own person, the exact kind of ideal after which everyone was craving. People were sick of the dimpled insipidity, the patronizing elegance or dark allurement that had been the only alternatives of feminine charm hitherto.

With Ellen Terry came color and lustre. There was an indefinable magic about her, with her hair of “spun gold,” set like a halo round the most perfectly-posed head in the world. Then there was that wonderful floating walk of hers. Even now—grandmother though she is—Ellen Terry walks as though she were arm-in-arm with some invisible fairy.

There was her gaiety, too, her wistfulness, her freedom and grace of every movement, her rich, impulsive voice. To a world only just emerged from the sermoline, Ellen Terry could, indeed, hardly have been other than a thing of wonder and worship. Everyone, it will be remembered went delirious about her. “Grace pervades the hussy,” said blunt old Charles Reade. “She was, at that time,” recalled Mr. Clement Scott, twenty years afterwards, “the most romantic looking creature I ever beheld.”

Beyond all and above all, however, so far as the aesthetes were concern-

eded, there was color. There was an amazing instinct, too, not only for color but for poetry of design. These gave Ellen Terry, from the first, a never-failing faculty of surrounding herself with an air alike of fragrance, freshness, and mystical mediæval romance. She could wear dresses that—then, at any rate—no one else could dream of wearing, and upon her they looked beautiful. She seemed to live naturally in a world of green and gold and sapphire. She seemed born to tread the “meadow starred with daffodils.” She was fair Rosamond before a line of “Becket” had been written, and Guinivere when “Idylls of the King” were only idylls still.

And with this instinct she had that wonderful instant artistic sympathy that made her at once so incalculably valuable a comrade to Henry Irving and the very priests of the children, to honor and adorn the new-created English art-world. Possibly there have been artist-actresses of more obvious achievements than Ellen Terry. Sarah Bernhardt has, for instance, exhibited statues; Mr. Forbes Robertson has figured on the walls of the Academy. It is to be doubted, however, if there has ever been a single player, of either sex, with such universal artistic instinct, such a genius for understanding, such a power of inspiring poet, artist, and musician alike, as Ellen Terry possesses. This last faculty has been due partly, perhaps, to her own beauty, grace, and charm; not less, however, one fancies, to that rare blending of an intense intelligence with the most simple-hearted humbleness. “It is enough for me,” she once wrote, “to be of some little help to Henry Irving and to the art I love.”

So, unrivalled, without precedent or successor, Ellen Terry remains queen of that aesthetic movement which is by no means dead or done with, but is still, in an ever-widening ring, spreading its message of color and brightness and beauty to to the ends of the earth. She is, however, a great deal more than that. Through it all, she kept unspoiled her own broad, breezy, healthy womaniness and humor—the humor, even, of “Madame Sans-Gené”! It has saved her from a thousand artistic pitfalls, into which weaker “souls” have been only too prone to sink. Heaven and “Patience” know the follies and feeble sentimentalities that the aesthetic movement brought in its wake. To judge from some feminine theatrical performances, these are by no means out of the fashion even now. But there could be no better proof of the splendid, sane humanity of Ellen Terry than that she is absolutely free, now and always, from even the remotest affectation. She is still “just a woman.”

Thus, perhaps, it has come about that, among the strangely different poets whom she has understood and interpreted with such magic insight, there should stand first and foremost one William Shakespeare. It must never be forgotten that at the very time when all the aesthetic world was worshipping her, Ellen Terry was realizing, in this shape or that, one, at least, of Shakespeare’s feminine ideals—the one possibly most removed from any thought of aestheticism.

A supreme and universal Shakespearean actress Ellen Terry may not be. Beautiful, majestic, and ideally competent, she could not, of course, make any part lifeless or unpoetic; but her Lady Macbeth, her Kath-

rine, her Volumnia, might still be surpassed by an actress with a wholly different and less impulsive method—an actress, say, of the Siddons type. Indeed, Ellen Terry herself has confessed that she never felt at home with Lady Macbeth. She could not feel it in her heart to call sincerely upon those spirits to “un-sex” her!

On the other hand, it is most sure that Ellen Terry’s Beatrice and Portia will remain incomparable. Others of Shakespeare’s more maidenly gallery—Ophelia, Juliet, Imogen—she has played delightfully, naturally, pathetically, wistfully, passionately. But their full gamut has not coincided so exactly with Ellen Terry’s as the gaiety, courage, sympathy, and womanly self-reliance of Beatrice and Portia. After all, they both belong, in the main, to the same glorious type of Shakespearean woman. Both are frank and free and joyous; both are all compact of wit and winsome health and sound sense; both are aglow with an infinite capacity for love; both have that grace of heart, if one may call it so, which only genius can bestow, in the actress as well as the poet.

With Beatrice, probably, Ellen Terry’s name will be more eternally coupled, mainly because she is, in herself, a brighter, truer character even than Portia. And what a memory of joyance and of grace that Beatrice is—the Beatrice of the old Lyceum days! Who will ever forget the sight of Ellen Terry sailing down those garden steps, in her brodered kirtle? “Against my will, I am sent to bid you come into dinner!”

It has more than once been regretted, by the way, that, in the whole of that wonderful list of Lyceum revivals, “As You Like” should never have found a place, and that

Ellen Terry should never have had a chance of playing another member of the same Shakespearean sisterhood—Beatrice’s country cousin, Rosalind.

Lastly, even now, after fifty years upon the stage, it is one of the wonders of the time what youth, what buoyancy, what spontaneous charm Ellen Terry still infuses into every play where she appears. She acts still, as she always did, just from her heart, as naturally as a bird sings. And she is always right, even for Bernard Shaw—whether she forgets her words or remembers them. In truth, it is a very paradox to call Ellen Terry’s art a “method” at all. Heaven help a dull girl who tries to imitate her!

After all, the secret lies not a little, one fancies, in the mere fact that Ellen Terry, like her sisters, Kate and Marion, and like her old comrade of childhood, Mrs. Kendal, has acted almost from her cradle. It will be interesting, indeed, to know how much of that “method” of hers is an unconscious and how much a conscious inheritance from her excellent father and mother—not to speak of old Dan Terry, with whom Sir Walter Scott revelled on porter and oysters behind the Adelphi in the year of Waterloo.

How many present-day actors and actresses, one wonders, are training up families of clever, healthy-minded stage, after the patient, loving, practical fashion of Ben Terry and his pretty wife? The West-end flat and the motor-car, at present so generally affected, seem hardly in that direction.

Still, there is something more in Ellen Terry than even the family magic. Perhaps it is all in that little phrase, “Then a star danced, and under that was I born.”

The Humorous Side of Strikes

CHAMBERS'S JOURNAL.

It is a good thing that even the most serious concerns of life often have a humorous side. A strike is usually regarded as a most regrettable means for the securing of concessions or the redress of grievances, and it is nearly always attended with sorrow and discomfort to the strikers. But even in some of the worst strikes of history, incidents have stood out which have tended to brighten the dark pages.

THE reasons for which workers will strike are sometimes absurd to the last degree. The record in this direction is claimed by a shipping paper for the firemen of the American steamer *Eastland*. The stokers ceased work in the middle of a voyage because the cook gave them boiled instead of mashed potatoes!

Again, at Pittsburg, the Birmingham of the United States, fifty workmen engaged upon a building threw down their tools and "came out" because their employer would not supply them with lemonade. The "boss" was adamant. "I gave you lemonade once," he said, "and you all drank so much that you made yourselves ill. Next thing you'll be wanting lady-fingers and ice-cream, and hammocks to take naps in." It is satisfactory to learn that these over-luxurious workmen got no sympathy from their union, and were forced to come back on their employer's terms. He was generous, and subsequently supplied ice-water ad lib.

Four hundred miners once struck for the sake of a mule. This amiable animal, by name of Jim, had been employed for many years in a coal-mine at Daleston, Ohio, and the men were much attached to him. One day the mine boss decided to transfer Jim to another pit. Promptly every one of the four hundred struck work, and not until the decision was reversed would one of them handle pick or shovel.

The Chinese are so stolid a race that it is hard to fancy them in the role of strikers. Yet a very peculiar strike once occurred in Canton; the executioners who do the beheading ceased work, complaining that unless prices were raised they should all starve. Their pay was only five hundred cash (one shilling) per head, and their request was for double that amount as a minimum living wage. They brought their grievances before a mandarin, but his only reply was that he could not give them a rise in wages, but that if they did not return to work at once he was convinced that business would soon become brisk. This veiled, but ominous, threat had a prompt effect.

There was humor and pathos too in the strike of the blind broom-makers in Philadelphia a year or two ago. The men, to the number of one hundred and fifty, struck for an increase of wages, and day by day for more than a week paraded the streets of the Quaker City. They needed no police protection, as for once the usually selfish public constituted itself their constant and capable guardian. Everything and everybody gave way to them, and eventually the city authorities intervened and the matter was settled by arbitration.

It was in Philadelphia, again, that a strike occurred which the local papers described as "one of the most charming social events of the season." The strikers were the fifteen hundred skilled workmen of the Brill

car-works. As none of the men made less than four pounds a week, and many as much as twelve pounds, there was naturally not much distress. The strike-pickets strolled round the works in fashionable flannel suits, while the others played golf or baseball or gave coaching parties. In the evening the leaders visited the pickets in dress-clothes. Any stranger approaching the pickets were politely informed that there was a strike on, and the picket would then, as a rule, apologize for assuming that the visitor might be in search of work, and end by offering him a cigar.

What an immense amount of strike-loss would be saved if only every employer had the tact and good sense of the owner of a factory in Cleveland, Ohio! Most of his hands were girls, and one day the whole lot struck for some fanciful grievance. Instead of storming at them or locking them out, the proprietor came into the great work-room. "Young ladies," he said, "we must talk the matter over quietly. Come with me." He then led the way to a great confectionery establishment, begged every girl to order what she pleased, and by the time they had finished large plates of ice-cream, found them perfectly amenable to his own terms.

We hear a good deal nowadays of women on strike. In February of last year about a hundred Kettering workgirls employed by a wholesale clothing firm struck against a reduction of wages and left the building in a body. But they did not go far. There were several hundred men in the works, and the girls decided that these must be induced to join them. Very ungallantly, the men refused, so the girls decided on

sterner measures. When the men returned after the dinner hour, behold the whole hundred strikers massed around the entrance! "You may as well go home," shouted the girls; "you cannot come in here." Members of the firm and the clerks were allowed to pass the cordon, but not a single workman. One made an attempt to slink in behind a member of the office staff. Dire was the result. The girls pounced on him, and in an instant his coat was ripped off his back, and he was reduced to shouting lustily for mercy. Not another man dared face the band of Amazons, and eventually all the rest went home.

Talk of the sterner sex; when it comes to striking, women more than hold their own. A strong body of New York police who attempted to arrest two workgirl strikers outside a hall where eight hundred of their sister-strikers were holding a meeting had an exceedingly unpleasant experience. Some scores of the girls armed with hat-pins charged them, and the unlucky officers of the law had literally to run for their lives. Two were quite badly stabbed.

An absurd incident relieved the sordid brutality of the great tram-car strike in St. Louis. A number of new men having been engaged by the Transit Company to take the place of the strikers, the wives and sweethearts of the latter determined to prevent them from earning the opprobrious title of "scab." One of these men named Langenberg had formerly been a member of the union, but had left it. The company put him to work at once, and he made one journey in safety. When he returned to his shed for a second run, there was his wife, a tall, powerful looking woman, awaiting him. She

at once began to try to dissuade him from taking a second car out. He refused, and started. Quite undaunted, she boarded the car, stood beside him, and lectured him all the way down down. Still he remained obdurate. All of a sudden the good lady lost patience, and seizing her refractory husband by the collar, lugged him ignominiously off his perch, and picking up a barrel-stave—well, to put it plainly, spanked him severely. The unfortunate man gave it up after that, and went meekly home.

An extraordinary scene was witnessed one day last autumn in the Avenue de la Motte Piquet in Paris. Fifty-four stone-masons engaged upon a new building struck work because their wages were a week overdue. The reason of the delay in pay was a dispute between the builder and the contractor. When the builder appeared upon the scene he was immediately surrounded by the men, who loudly demanded their dues. The builder refused to pay until the contractor had settled with him. In a trice the infuriated masons bundled the unlucky man into the temporary office, and with extraordinary rapidity walled him up, declaring that he should not escape until he settled up with them. Sixty policemen were summoned, but the masons armed themselves with their tools and vowed they would attack any one who entered the works. A huge crowd collected, and great excitement reigned, until at last the builder gave in, and sent for the necessary money. When the cash had been counted and each man paid, the masons pulled down the wall and released their prisoner, who had been shut up without food from eight in the morning till five in the afternoon.

Strikers, however, have no mono-

poly of summarily righting their wrongs. Masters driven nearly to despair by absurd demands have before now taken the law into their own hands. A serio-comic incident of this kind happened at Tampa, Tampa, which lies on the Gulf-coast of Florida, and is possibly best known as the place from which Jules Verne started his adventurous travellers on their journey per projectile to the moon, practically lives on cigar-making. Most of the cigar-makers are foreigners, Italians, Spaniards, and Cubans, and some years ago five thousand of them formed themselves into a union which they called La Resistencia.

There is no space here to detail the methods of the organization. To say they were tyrannical is to put it very mildly. Soon the unlucky masters could hardly call their souls, let alone their factories, their own. The last straw was a demand on the part of La Resistencia to dismiss all employes who did not belong to the union. This was met with a flat refusal, and a wholesale strike resulted. Not only the masters but all Tampa suffered, and finally the leading citizens banded together to put a stop to this state of affairs.

A vessel, apparently a humble fruit-schooner, was chartered. One night she lay in the bay; the next morning she was gone, and so were thirteen of the chief leaders of the strike. They had been kidnapped. Where these men were landed only those responsible for kidnapping them know; but it is said to have been at a South American port. The result was all that could be desired. To use an Americanism, La Resistencia was "bu'st higher'n a kite;" and since the application of these heroic methods there has been little trouble.

Building the Great Simplon Tunnel

BY FRANCIS FOX IN CORNHILL MAGAZINE.

On June 1, of this year, it is anticipated that the formal opening of the Simplon Tunnel for public traffic will take place. The work of boring this tunnel for 12½ miles through the Alps has taken nearly eight years, during which time almost insurmountable obstacles were met and overcome. The story of the building of the tunnel is of intense interest.

ON August 1, 1898, work was commenced at the north entrance to the tunnel and on August 6 at the south entrance. From both ends the tunnel rises towards the middle in order that any water from springs encountered might flow away by gravitation; the gradient from the north being 1 in 500, and that from the south 1 in 143, the machinery at each side being calculated and arranged to be of sufficient power to carry on the work for 6½-8 miles, or half the entire length of 12½-14 miles. It is difficult to realize what a length of 12½-14 miles really means, but the best way is to compare it with some distances with which we may be familiar. Taking the Houses of Parliament at Westminster as a centre, and describing a circle of this radius, it will pass through St. Mary Cray, Ewell, Hampton Court, Hounslow, Pinner, and each spoke of this large wheel will represent fairly accurately the length of the tunnel. The northern entrance is, as already stated, almost on the level of the existing terminus at Brigue, whereas at Iselle all machinery and material had to be carted for twelve miles up the steep road from the Domo d'Ossola Valley.

The work went on steadily from both entrances, and consisted of one single line of tunnel, with a parallel gallery for the second tunnel running alongside at a distance of about fifty-five feet; cross passages every 217 yards are provided both for purposes

of ventilation and for taking in and out the various materials. Most praiseworthy arrangements were made for the care of the men, with the view to their suffering no harm from the exposure to Alpine air after working in the heat of the galleries. A large building was fitted up near each entrance provided with cubicles for dressing, and with hot and cold douche baths. At the top of the building steam pipes were fixed and each man was entitled to his own private rope and padlock; this rope passes over a pulley in the roof and has a hook at the end to which he can attach his day clothes, with his watch, purse and pipe, and pulling them up by the cord and padlocking it he secures the safety of his belongings. On returning from his work he at once enters this warmed building, has his bath, lowers his clothes, and, hanging his wet mining dress on the hook raises it to the roof. Here it hangs until he again returns to work, when he finds his clothes dry and warm.

The adoption of the Brandt hydraulic drill not only enables the gallery to be driven at at least three times the usual speed, but it avoids the creation of dust, which in mining is so productive of miner's phthisis. Not a single instance of this fell disease has occurred during the work, and although a well-appointed hospital was provided at each end of the tunnel the beds were generally empty.

At a distance of 2½-2 miles from

Iselle a great subterranean river was met with in September 1901, which caused serious delay, and for a period of six months the total advance was only forty-six metres. The difficulties at this point were such as in the hands of men of less determination might have resulted in the abandonment of the undertaking. Not only was it necessary to closetimber the gallery on both sides and also at the top and floor with the heaviest baulks of square pitch pine twenty inches thick, but when these were crushed into splinters and the gallery completely blocked with their wreckage, steel girders were adopted, only in their turn to be distorted and bent out of shape. It seemed as if no available material could be found which would stand the enormous pressure of the rocks, until steel girders, forming a square placed side by side (the interstices being filled with cement concrete) resisted the load. Fortunately this "bad ground" only extended for a distance of about fifty yards, but it cost nearly 1,000l. per yard to overcome this difficulty, and required the encasement of the tunnel at this point on sides, floor, and arch with granite masonry, eight feet six inches in thickness.

Meanwhile the progress at the Brigade side was good, and the miners reached the half-way boundary and then began to encounter great heat from both rock and springs. It was a curious experience to insert one's arm into a bore-hole in the rock and to find it so hot as to be unbearable; the maximum heat then encountered was 131 degrees Fahrenheit. But now a fresh difficulty presented itself, as in order to save time it was desirable to commence driving downhill to meet the miners coming uphill from Italy, and thus the very pro-

blem which the ascending gradients had been provided to avoid had to be faced. As the gallery descended the hot springs followed, and the boring machines and the miners were standing in a sea of hot water; this for a time was pumped out by centrifugal pumps over the apex of the tunnel, but at last, and while there still remained some 300 or 400 yards to be penetrated, it was found impossible to continue going down-hill.

Nevertheless time had to be saved, and as the height of the heading was only seven feet while that of the finished tunnel was 261 feet, it was decided to continue to drive the gallery forward, on a slightly rising gradient, until it reached the top of the future tunnel. After 702 feet had thus been driven the hot springs proved so copious that work had to cease, and an iron door, which had been fixed in the heading some 200 or 300 yards back was finally closed, and the gallery filled with hot water. Advance now could only be made from the Italian "face," but even there the difficulties from hot water were very great, so much so that for a time one of the galleries had to be abandoned and access obtained to it by driving the parallel gallery ahead and then returning and taking the hot springs in the rear. The only way in which these hot springs, sometimes as high as 125 degrees Fahrenheit, could be grappled with was by throwing jets of cold water under high pressure into the fissures, and thus diluting them down to a temperature which the miners could stand.

At the right moment, at 7 a.m. on February 24, 1905, a heavy charge was exploded in the roof of the Italian heading, which blew a hole into the floor of the Swiss gallery and released the impounded hot

water. It was here that a truly sad incident occurred: two visitors to the tunnel who, it appears, had entered the gallery with a desire to witness the actual junction, were overcome by the heat and probably the carbonic acid gas from the pent-up hot water, and died. As illustrative of the very serious risks to which the officials and workmen are exposed in tunnel work, only on May 22 last in the Bosruck Tunnel, on the Austrian Alpine Railway, sixteen men and a foreman, who were at work at the end of the gallery, were all killed by an explosion.

By means of jets and spray of high-pressure cold water the air of the tunnel is reduced many degrees in temperature, and it is very noticeable how rapidly the heat of the rocks cools off when the gallery has been driven past them. Doubtless when the permanent ventilation for the traffic is established, and all the arrangements are installed, the air of the tunnel will be as fresh as it has always been, and will not be at all disagreeably warm.

On April 2, 1905, the visitors and officials from the Italian side traveling in a miners' train, arrived within 250 yards of the "*Porte de fer*," in the middle of the mountain, six miles or more from either entrance, and completed their journey on foot up to that point. Meanwhile the officials and visitors from the Swiss entrance had traveled up to the other side of the door. At the right moment this was opened by Col. Locher-Freuler, and the two parties met and fraternized, embracing one another. A religious dedication service, conducted by the Bishop of Sion was then held on the spot, and the Divine blessing was invoked on the tunnel, the officials, the workmen, and the trains,

and touching reference was made to those who had lost their lives in the execution of this great work—some forty or fifty in number. Thus was the "*Fete de Percement*" of the greatest tunnel in the world celebrated, and it was felt that the service was an appropriate recognition of the injunction, "In all they ways acknowledge Him, and He shall direct their paths."

To commemorate this fete of 1905, a handsome medal was designed by the Swiss Federal Railway Department and struck off for distribution; of these, four in gold were presented to the four partners, others in silver to the engineers and officials connected with the enterprise, whilst the actual workmen each received one in bronze. It is an interesting coincidence that in 1805, exactly a century ago, a similar medal was issued by Napoleon I. in commemoration of the construction of the Simplon Pass, and on it are given his profile, while on the obverse is shown a figure of Hercules, and in the background the zig-zags of the roadway, with teams of mules and carts passing over the mountain.

It was hoped and intended that the tunnel should have been publicly opened toward the end of 1905, but again fresh difficulties presented themselves. In certain parts of the work, in consequence of great pressure on the arch and side walls, the floor was forced up, necessitating the provision of an inverted granite arch in order to prevent a recurrence at a future time. This was satisfactorily accomplished, but again a postponement was decided upon to enable electric traction to be installed. On February 25 last a train of fourteen vehicles traversed the tunnel several times, the highest temperature en-

countered being only 66.2 degrees Fahrenheit. The inauguration of the tunnel is officially announced for May 30th, accompanied by great re-

joineings and probably with State ceremony. The formal opening for public traffic is to take place on June 1st.

King Edward at the Theatre

BY RUDOLPH DE CORDOVA IN PEARSON'S MAGAZINE.

When King Edward wishes to visit a theatre, he makes all arrangements through an agent who has performed this service for him for twenty-eight years. The visit is paid without ostentation. The King occupies the Royal Box, of course, but there are no special decorations and no stage references to his presence.

ALL arrangements for a Royal visit to the theatre are made by Mr. George Ashton, who has accompanied the King, and the Queen as well, to all places of amusement for the last twenty-eight years.

Every week Mr. Ashton sends a programme of what is being done at all the theatres to His Majesty. This the King looks over, and if he decides to go to the theatre that week he sends for Mr. Ashton, and his decision as to the particular choice is come to in one of three ways.

The most usual is for the King to ask Mr. Ashton what good plays are on, and it is on his recommendation that the choice is made.

Sometimes, however, the King will say, "They tell me that such-and-such a play is a good one. Is it?"

Having for so long attended the King in his theatre going, Mr. Ashton naturally knows accurately whether the piece in question would be likely to please the King. If it is, he says "Yes," and the matter ends. If, on the other hand, it is of the class which he knows would not find favor in the Sovereign's eyes, he says, "I am afraid your Majesty would not care for that," or words to that effect, and something else is chosen.

The third method of selection is when the King has already decided with the Queen on the theatre they propose visiting, when he generally says: "We think we would like to see such-and-such a piece," and Mr. Ashton sets about making the arrangements for buying the box and having the Royal entrance opened.

That His Majesty has the greatest consideration for others, and will go out of his way to do a kind act everyone knows, for in the glare of publicity in which his life has to be lived it is difficult to conceal examples of this trait in his character. Such publicity, however, does not always prevent such graciousness being concealed.

For the principal prominent actors the King has something of a personal regard, and at times when they have happened to be playing in a piece which has not hit the public taste strongly, he has been heard to say, "I think so-and-so might like me to go to that play," for the King knows that if he patronizes a performance others will go; and though even the Royal favor cannot translate a failure into success, it may help to minimize the loss, as it has done over and over again, or turn a hesitating success into a decided one.

While His Majesty goes to practically all classes of theatrical entertainment indiscriminately, he is particularly fond of a good comedy, well written and well acted. He is also fond of musical plays, but 'melodrama does not interest him so much. The King is, however, very particular, and strongly objects to any piece containing anything in the nature of vulgarity or bad taste. It is also safe to say he would not countenance any objectionable references to men in public life or to foreign potentates, though he is too broad-minded and catholic in his views to object to the topical song in which the events of the day and the actors in them are introduced in a pleasant fashion.

That the King has the intention of going to a given play is never announced in the newspapers beforehand, though the arrangements may be made anywhere from a day to a week in advance. When the night comes the manager and Mr. Ashton wait at the private entrance to receive His Majesty, and together they conduct him and the Queen, if Her Majesty happens to be with the King, to the box which, with its withdrawing room, has been made ready for their reception.

On such occasions two things are always found in the Royal box which distinguish it from the evenings when it is sold to the casual purchaser. One is a beautiful bouquet of flowers and the other is a specially printed programme. Both are provided by the manager of the theatre, and are placed in the box for the use of the Royal visitors. The bouquet is never presented to the Queen as bouquets are presented to Her Majesty when she takes part in any Royal function. As a rule, it is placed on a chair or table in the reception room, and

later rests on the ledge of the box. Its presence is invariably the first intimation furnished to the great body of the audience that the entertainment is to be honored by the presence of the King and Queen, for comparatively few people notice the awning covering the strip of pavement leading from the door of the private entrance to the street where the carriages draw up. By the side of the bouquet the programmes, which are generally printed on white satin, are placed, and, as may be expected, they make interesting mementoes for the people who are fortunate enough to secure them after the Royal party has left the theatre.

On ordinary nights anyone may buy the Royal box, but the privilege of using the adjoining withdrawing-room does not go with it. That is reserved specially for Royal visits, and is the one part of the theatre in front of the curtain of which the general public is ignorant. It is a little sitting-room, handsomely furnished, and is always decorated with fresh flowers for its distinguished visitors. In one or two of the large theatres, and at the Opera, where space is more plentiful, there may be even a special smoking room for the King's use, for between the acts His Majesty likes to smoke a cigarette. Often, too, the latest editions of the evening papers are taken to him there, so that he can read while he is smoking if he does not wish to talk with the friends whose privilege it is to have accompanied him.

While, as a rule, the withdrawing-room is only prepared at the time it is to be used by its Royal visitors, at one or two houses it is always kept ready for occupation at a moment's notice. This is the case with the Duke of York's Theatre, where even

the vases are always filled with fresh flowers.

To that little ante-room His Majesty sometimes sends for the leading actor of the evening in order to congratulate him on his performance, or to express His Majesty's pleasure at the entertainment generally. Those are treasured moments for the actor, for the King has a knack of setting everyone at ease at once, and his remarkable memory is never shown to greater advantage than under such circumstances. The King not only remembers every play he has seen but the previous performances of all the actors, and his criticism is always valuable, while it is by no means improbable that a hint as to some fine play seen abroad with a part specially suitable to the actor in question may, at times, have led to its adoption to our stage. To mention special actors who are alive and before the public would be invidious, but among those who are dead both the King and Queen had a great admiration for

two such widely dissimilar artists as Sir Henry Irving and Mr. Arthur Cecil. In the latter years of Sir Henry's life it is safe to say the King never went to see him act without sending for him to pay a visit to his withdrawing-room.

Whatever pleasure the King derives from the visits of the actors to his withdrawing-room, he never allows it to interfere with the public convenience. If he sends for an actor between the acts, Mr. Ashton has to find out how long the interval is, so that the curtain may not be kept down unduly. The same consideration regulates the King's arrival at the play. He is invariably punctual, and is in his box at the hour announced for the commencement of the entertainment. If, however, anything should happen to prevent his being present, the management is invariably instructed not to inconvenience the audience by keeping the curtain down, but to begin at the ordinary time.

The School Doctor in Germany

BY WILLIAM H. DAWSON IN WORLD'S WORK (ENGLISH).

By the large body of valuable legislation which they have adopted for the welfare of the working classes, successive German Governments have shown a rare appreciation of the importance of industrial efficiency. A deeper truth is now being taken to heart, namely that physical and mental efficiency, upon which industrial efficiency depends, can only be ensured when care is taken to guard the health of the child.

SCHOOL hygiene has been regarded in Germany as an important part of educational policy for nearly forty years, but it was only in 1889 that the school doctor of the thorough-going kind made his appearance. Leipzig took the lead, and its example was soon followed by other large towns in Saxony and other states, until to-day the number of school doctors in active work cannot

be far short of six hundred. Meantime, the school authority of Wiesbaden took the question up with great energy as well as intelligence, and did not rest until it had produced for its own guidance a series of regulations so efficient, so circumspect, and so comprehensive that they represent the best theoretical work of the kind which has so far been done, and serve as models which other

towns, not only in Germany but in other countries, readily copy.

The key to the Wiesbaden system of medical oversight is contained in a school regulation which states :

"The school doctors have to examine the newly admitted scholars thoroughly in regard to their physical condition and their state of health, in order to determine whether they need permanent medical oversight or special consideration in the imparting of instruction (for example, exemption from special branches of instruction, such as gymnastics and singing, or restriction in the instruction given to them, the allotment to them of special seats on account of defective sight or hearing, etc.)."

This examination extends to the heart, lungs, the higher air passages, the spinal cord, the skin, ears, eyes, mouth, the nose, and the abdomen, and the results are recorded in a certificate, which is kept posted up year by year as the child advances in the school, supplementary observations as to its physical development or defects being entered as often as necessary. The health certificate is a very severe test of fitness, and recognizes three degrees of physical and three of mental efficiency. As to a child's "general constitution," it may be certified as "good," "medium," or "bad." It is described as "good" only when the condition of health is absolutely perfect, and as "bad" when chronic weakness or evident disposition to illness exists. The classification of a child's "mental constitution" is into "normal," "backward" and "defective." Moreover, twice a year the height and the weight of each child are taken by the teachers, with measurement of the chest by the school doctor whenever desirable. The health certificates of

children who need regular oversight are endorsed to that effect, and these children must be presented for special observation whenever the school doctor visits the classes to which they belong. Further, a thorough re-examination of all children is made in their third, fifth, and eighth school years. In accordance with the observations made, the school doctor advises the head teacher as to physical peculiarities which need to be considered in school work. Where maladies are found which require medical attention, the parents are advised direct, but a school doctor may not professionally attend upon children upon whom he reports at school.

It may be asked, how do parents like the attentions of the school doctors, which, however well-meaning, seem so inquisitorial and so intrusive? Universal experience shows that, thanks to the discretion with which the school authorities and the school doctors go about their work, parental opposition is extremely rare, and even initial prejudice is only half-hearted where it is found at all. The vast majority of parents heartily welcome the school doctor's advice and help, and not merely facilitate the periodical examinations but carry out faithfully the directions given. This is the more noteworthy since in no German state do the education authorities possess legal power to compel examinations, or to inflict penalties in the case of refusal to undergo them. The whole system rests on a voluntary basis, yet it acts with remarkable efficiency. The explanation is that tact and suasion have done what coercion would probably have failed to do. Parents are encouraged to regard the school doctors as friends whose sole interest is their children's welfare, and the school doctors, for their part, take

diligent care to cultivate confidence by enlisting the co-operation and the presence of parents at every examination and all through their work as the guardians of the children's health. On the other hand, if a parent prefers that examination shall be made by the family doctor, no objection whatever is raised; all that is asked is that the same careful and exhaustive investigation shall take place.

What, however, has been the practical effect so far of this system of school hygiene? It is, of course, impossible to put an answer to this question in the form of a bald set of figures, though figures may none the less be cited eloquent and conclusive in their proof of invaluable results. In the first place young children are delayed from entering school whenever their physical or mental condition is such that school life, work, and discipline would be harmful to them. In the second place, every detectable weakness of every child is dragged to light and carefully placed on record. Where medical treatment can be resorted to with hope of recovery, directions to that effect are given, and the school doctor, while he does not himself give professional attention, takes care that his advice is duly followed. Where, on the other hand, a child needs exceptional treatment in school, the requisite attention is noted on the health certificate, and it becomes the duty of the teacher to see that it is faithfully observed.

But the most important part of the school doctor's work is the detection of maladies and weaknesses which but for his scrutiny would have continued to evade the eye of the parent and teacher alike, and might have been the cause of permanent injury to the children concerned. To cite the case

of Berlin. There school doctors were first employed in the year 1902, and of the children notified in that year for primary admission in school 12.3 per cent. had to be put back for varying terms as unfit for school work. In 26 per cent. of the cases the reason was general physical weakness; in 16 per cent. it was recent serious illness; in 16 per cent. delicate constitution; in 10 per cent. insufficient development; in 5 per cent. tuberculosis of the lungs. Last year the number of newly registered children examined was 34,562 and of these 2,927 or 8.5 per cent. were put back, while 7,041 were placed under oversight, making the total number under oversight in that year 24,225. The cause was defective sight in 22.4 per cent. of the cases and general weakness in 13 per cent. The school doctor's report contained the significant remark:

"Most of the children in the incipient stages of tuberculosis attend school without either parent or teacher having any suspicion that they ail anything."

But at medical oversight in the narrower sense the more progressive German towns do not stop, for here and there specialists are employed for the treatment of eye, ear and throat maladies, and in several towns systematic attention is also given to the teeth of all children in the elementary schools. At the present time the Socialist members of the Berlin Municipal Council are pressing upon their colleagues a scheme for the establishment of clinics in various parts of the city, in which the whole of the primary scholars of Berlin — some 300,000 in number — will be entitled to claim free dental attention. Hamburg and Strassburg are among the towns which have already moved in this direction?

Inventions the World Would Welcome

BY T. C. BRIDGES IN GRAND MAGAZINE.

With the advance of civilization, the needs of humanity have grown apace. One invention has created a demand for another invention, and to-day the cry goes forth in every direction for new commodities that will satisfy the awakened desires of the world.

THERE is an absolutely colossal fortune in sight for the man who will invent a perfect substitute for either india-rubber or guttapercha. The supply of these two substances, of which Great Britain alone imports between eight and nine million pounds' worth annually, is almost stationary, while the demand is constantly increasing.

It is not only the rapid multiplication of motors and cycles that makes such enormous requisition upon the world's stock of rubber; electrical industries have much, perhaps most, to do with the threatened rubber and guttapercha famine. A single Atlantic cable takes fully five hundred tons of best Singapore rubber for insulation purposes, and nothing else will act as a substitute. Nor must it be forgotten that the great game of golf absolutely depends upon rubber and guttapercha for its very existence. All the best balls are composed of fine elastic wound upon a core and covered with a shell of guttapercha. The demand, in fact, from one cause and another, has jumped all at once from hundreds to thousands of tons.

Trees are being planted by the thousand in Ceylon, Brazil, and elsewhere, but it takes a good many years for the Hevea Brasiliensis and the other rubber-producing trees to come to maturity. Meantime, inventors all the world over are doing their utmost to find a substitute. It would require a stout volume to record even the more important of the various experiments which have been made, or cite all the substances

which invention has exercised its ingenuity upon, so far without success. The task of producing an artificial india-rubber has "stumped" even the Germans, the cleverest synthetical chemists in the world, men who succeeded in producing indigotin and scores of other coal tar miracles.

Some years ago great excitement was caused by the discovery that a compound of nitrated linseed oil and nitro-cellulose gave rise to a substance closely resembling rubber. But the artificial product has not the same elasticity as true rubber, and though useful for certain purposes is by no means the equal of the natural article. Castor oil, maize oil, crude Texas petroleum, and many other similar substances have been experimented upon, while quite recently a Mr. John Muir is reported to have discovered a process whereby tanned pigskins may be made available for motor car tires.

Auto-motor vehicles have shown, as nothing else could, the inherent badness and wastefulness of the present system of road-making. The ideal road of the future will be one that is smooth, impervious to water, noiseless, dustless, and upon which horses cannot slip or wheels skid. The new road surface must, above all, be inexpensive. Here, again, as in the case of rubber substitutes, it would take many issues of this magazine to give even a resume of the multitudinous materials which have been tried—and found wanting! Some of them we are well acquainted with—asphalt, wood blocks, tar, macadam, concrete,

bricks. Rubber has even been used to pave the courtyard of great London hotels. There is the material known as Westrumite and other somewhat similar inventions for use on the surfaces of ordinary macadam roads, which certainly do much to bind them together and keep down dust. But none are perfect, and the best are very expensive. A curious experiment has recently been made in America. Paving has been made out of the fibre of common salt marsh grass pressed into blocks by hydraulic power, after which the blocks are submerged three times in three different kinds of oil. The resulting pavement is said to have all the advantages of wood pavement and to outlast any timber, even jarrah. Those best qualified to give an opinion, however, believe that the perfect pavement will be some form of glass, which brings us to another possibility of the future—namely, malleable glass.

Much interest was aroused when, in 1875, a Frenchman, M. de la Bastie, announced that he had made a form of glass so tough that it could not be broken. His process consisted in heating the glass until it was just about to soften, and then dipping it into a bath of oil at a much lower temperature. The inventor demanded a million sterling for the English patent rights of his process, and had it been all that was claimed for it, the price would perhaps not have been excessive. But it soon appeared that the results of the toughening process were not uniform, and that objects made by the Bastie process were by no means unbreakable. This defect, together with the high price, has as yet prevented its coming into extensive use.

What is really wanted is glass that is not merely toughened but malleable as well. More than once, in the re-

cords of the past, we find stories of the invention of malleable glass. In the reign of Tiberius an inventor brought before the emperor a goblet of glass which, when flung down upon the floor, instead of breaking, only bent, and was easily straightened again with a hammer. It is never safe to trust a despot of the Tiberius type. The emperor had no fancy for all his subjects owning vases which could be crumpled up like handkerchiefs and carried in the pocket. He therefore kept the vase and killed the inventor!

The world wants malleable glass, and wants it badly. The man who discovers it will be one of the greatest benefactors of the human race. Not only roads, but houses—floors, ceilings, roofs, and all—might then be built of delicate-hued, transparent glass bricks or tiles. All our household utensils might be of the same material. Metal, china, and earthenware would then be at a discount, and an age of glass supersede that of steel.

Great, however, as would be the economic revolution effected by the discovery of malleable glass, it would hardly equal in its wide-reaching effects the invention of a method of utilizing atmospheric electricity—that is to say, of making practical applications of it without employing chemicals, dynamos, or other intermediaries. Some three years ago a certain Senor Clemente Figueras, Spanish by birth, who held the post of engineer of woods and forests in the Canary Isles, claimed to have solved this problem. This gentleman was declared to have invented a generator with which he was able to collect and store the electric fluid. His apparatus, rough as it was, was said to give a current of 550 volts, with which he lighted his house and drove

a motor of 20 horse-power. Alas ! we heard no more of this world-shaking revolution. What has become of the Spanish scientist and his amazing invention ?

About a year after the Figueras fiasco Mr. Alfred Whitney, of Chicago, startled creation by his project for obtaining electric power from the depths of space. According to this enterprising American, our atmosphere extends for only seventeen miles instead of the hundred or so we are accustomed to think of, and above it is an ethereal region charged with pure electricity. Some men might have been puzzled how to reach this store of everlasting power, even supposing it to exist. But a little thing like that does not trouble the Whitney mind. Seventeen miles up, he declares, the power of gravity ceases to exist. All that is necessary is to build a gun powerful enough to shoot a bullet-shaped magnet beyond the gravity limit. The bullet is to carry a cable, of which, as the magnet falls into space, one hundred and fifty miles will be unwound, and from that distance will be obtained electricity equalling 140,000 horse-power. Men of science may jeer, but Mr. Whitney is not disconcerted. The firing of that big gun should be a sight worth seeing.

The discovery of some method for obtaining atmospheric electricity first hand would be an amazing boon to humanity, and a good second would be a method of extracting electric power direct from coal. There is well-founded hope that the latter of these two problems may be satisfactorily solved before very many years are passed ; probably a larger amount of brain power is devoted at the present moment to this one object than to any other single possible invention. At present, under the best available

electric power systems, we can make use of less than one-twentieth of the available energy of coal. The rest is absolutely wasted. Just imagine what a huge saving would be effected could each locomotive or other engine manufacture its own electricity out of coal ! Travel both by sea and land would drop to half its present price. Manufacturers would find power so inexpensive that nearly every article of common use would be cheapened from 20 to 50 per cent. Every house would have its own electric light at an infinitesimal cost. Electric vehicles, smooth, swift, noiseless, and inexpensive, would replace all present forms of carriage, cart, and motor.

Another achievement which inventors have for many many centuries been struggling after is a simple and inexpensive method of utilizing the tides. In the Bristol Channel alone the rise and fall of the tides produces energy sufficient to run every mill, motor, and locomotive in the whole of Great Britain. And all these millions of horse-power run to waste because no means have yet been devised for turning them to man's use. Niagara has been harnessed. It remains to make the ocean drive our factories as it already carries our commerce.

Within the domestic circle, even, what a lack is there of many possible inventions small and great which would add vastly to the comfort and pleasure of life ! Who has not suffered from the miseries of a smoky chimney and wasted money on one device after another without obtaining relief ? There are cowls of every shape and size, some that turn like weathercocks with the wind, others that spin like giant tops, others again that are sheer nightmares of crooked hideousness. Yet none of them are perfect. Even the spinners,

which usually check the down draught when first affixed, will not stand heavy gales, and when they once get out of order produce a grinding roar which shakes the house and sounds like a giant coffee mill gone crazy.

We want, too, a scrubbing machine, a wall-papering machine, a window lock which shall defy Bill Sikes' best efforts, and likewise a really efficient burglar alarm that shall scare the burglar and not frighten the children into fits when stumbled over by the peripatetic cat. There ought to be money in all these things if they were cheap and efficient.

We want also a bootlace that will not break, a pipe that will not foul, and a hinge that will not creak. As for windows, they are the greatest nuisance in a house, especially the sash form. Either they are loose and rattle horribly when open or else they wedge tight and cannot be opened at any price. Good ventilating appliances are extremely expensive. Something that is cheap, will not

cause a draught, and is easily fixed is badly needed. Is there any invention for turning over music leaves? There should be a future for a cheap oil lamp that will not explode under any circumstances. Collars and cuffs are the stout man's burden in warm weather. Starch wilts on a Summer's day. Why have we not a starch that is proof against perspiration? It does not seem an impossible ambition?

But the list is endless. The perfect horse-shoe is yet a dream of the future. So is an envelope that cannot be opened without detection. So is a really practical paper fastener. The mechanical hair cutter may come some day. It should have a future in every home.

One comfort is that this is an age of invention. Those of us who have not yet reached the half-way house of life will doubtless see most of the un-invented inventions here mentioned, and probably many others, including even the greatest invention of all — the perfect flying machine.

Cooking by Electricity

BY CHRISTINE T. HERRICK IN WOMAN'S HOME COMPANION.

The writer is enthusiastic about electric cooking. Its advantages over coal or gas are many, no dust, no soot, no smoke, no smell are some of the blessings associated with the electric stove. Recent years have seen improvements which bid fair to bring the electric stove into general use.

GREAT have been the improvements in electrical cookery during the past few years. When I first cooked with electricity some years ago it was in a chafing dish, and cookery could be done only in the double boiler. The heat in the water underneath came from a coil through which passed an electric current. The water boiled quickly, but the rapid cookery that must be done in the

blazer of the chafing dish could not be accomplished.

All that has changed in the most modern electrical cookery methods. The coil may still be used occasionally for heating water, but now the heat in cookery is applied by contact. The electric wires are attached to the bottom of a flat plate like a stove cover, and when the current is turned on this plate is heated suf-

ficiently to cook food in the utensil placed upon it. There must be actual contact between the plate and the utensil, for there is practically no radiation, and if even the smallest space intervenes between the pan or kettle and the metal disk the contents of the vessel will not heat.

It is like magic. Here is a nickel-plated arrangement that looks like a chafing dish or an afternoon-tea kettle. There is no flame, no match, apparently no heat. You put your saucepan or your kettle on the plate, you turn the key, and in a few minutes there is a simmer or a bubbling in the contents of the vessel. The heat is there, although you saw no signs of its coming.

Electricity does not claim to bring water to a boil more quickly than does gas. Both take about the same length of time. But the odorlessness, the cleanliness of the electricity are advantages that are worth more than swiftness. Then, too, the heat can be graded better than with gas. There are three degrees of heat with the electric current, and the degree can be regulated by touching the switch. Food can be kept at a hard boil, at a medium stage or at a bare simmer as the cook pleases, and all accomplished by a mere touch.

Over the electric plate all sorts of things can be done. Here the meat is broiled on a broiler which cooks without smoke or waste of dripping. The latter is caught in the groove that runs around the boiler and drips into a vessel placed under the escape from this. Toast is made, all varieties of boiling, stewing, frying and sauteing are done. Waffles are baked, and this process is one of the most interesting. No chance here for one side of a waffle to be overbrowned and the other unpleasingly pale. By the electric current both the top and the bot-

tom irons are uniformly heated, the irons do not have to be turned, and a glance at the upper side of a waffle indicates the precise condition of the under side. There is no chance for inequality in cooking.

Plates are warmed in a flat plate-warmer furnished with a metal cover to conserve the heat. Irons are heated quickly and kept at an even temperature. One may work all day with one iron and not once have to wait while another is heating. Never is there a black mark on the clothes from the iron.

The oven is no less interesting. In this there must be, of course, a certain amount of radiation, and I confess to having had my doubts on this subject, even in the face of the assurance that the oven baked perfectly, until I saw a pan of biscuits come out brown after going in unbaked. They were left in just ten minutes and were done to a turn. Meat may be cooked in this oven as quickly as in a gas range, and the result is pronounced by competent judges to be equal to anything done in a gas or coal oven. The heat supply is so perfectly adjusted that the temperature of the walls of the oven can be changed at will, and the conditions found to produce the correct result at one time can be exactly reproduced when desired.

This, too, without radiating heat into the kitchen. I am told that a whole electric batterie de cuisine will not raise the temperature of the room two degrees. As I have said, there is practically no radiation from the plates on which cookery is done, and the necessary radiation in the oven is met and successfully combatted by double walls which keep in the heat and prevent its raising perceptibly the temperature of the room where the electric apparatus is used.

Such a kitchen as this is readily adopted, and one does not have to build a new room for it. The "range" may be nothing more than a plain and solid wooden table. In the wall back of it are the plug switches that regulate the supply of electricity. The connection is easily made with a supply wire.

An added attractiveness is given to electrical cookery by the utensils employed for it. Nickel finish, shining bright and easily kept clean, they attract the woman with the real housewifely spirit as do jewels and fine clothes the woman who loves dress. The thought that on the electric stove the polished pots and pans will never become blackened or smoked lends a fresh charm. The portability of each item is another delight. The knowledge that you can have your chafing dish or your tea kettle in working order by removing the bulb from your electric light and attaching to it the tube that connects with your cookery appliances makes it most attractive to those who do light housekeeping or who cherish a fondness for improvised meals at uncanonical hours.

In fact, the light housekeeper has been especially considered. For her benefit have been devised kettles, chafing dish, skillets and waffle irons that would beautify the room in which they were displayed. They can be ranged on her serving table in the dining room, and no one at the first glance will know that by means of the electric connection back of the table she can follow the example of one of Mrs. Whitney's characters and "kitch in her dining room."

Better perhaps even than the ornamental side of electrical cookery are the certainty about the degree of heat to be secured in every process of cooking, the steadiness of the supply

that renders one tolerably sure of attaining always the same results when directions are followed. Cookery is not an exact science, say what one will, but electricity ought to do much to bring it near to that much-to-be-desired state.

All this perfection and no drawback? Alas, there is one—just one! but to the majority of housekeepers it is mighty. It is found in that item so pertinent to so many households—the cost.

The advocates of electrical cookery will tell you frankly that the expense of cooking by electricity is about three times as much as by gas. But they claim that the other advantages outweigh the money cost. They remind you that you find it cheaper to ride in an electric car than to walk, to burn electricity than to use candles or lamps, and they say you should reckon the lessening of work and wear as an offset to pecuniary outlay.

This is true, and yet so many of us have more ability to give work and wear than money! The cost of the electricity itself is not all. The utensils themselves are high priced to one used to the cheap ware which supplies most of our kitchens. But again, they are so strong, so well made, they will be so free from scorch and consequent scouring that with care a set of them will outlast a half a dozen of the ordinary pots and pans we buy at a moderate figure.

Cooking by electricity has undoubtedly come to stay. How general its use is to be in the near future will be determined by the owners of our electric plants. A few years ago we were paying so much for gas that cookery by its means was a luxury for the rich. Now it is within the

power of the large majority. When electricity comes down in like manner cooking by it will soon be an accomplished fact.

The experiment has already been tried on a large scale in Utica, New

York, and I believe elsewhere as well, and the practice is bound to spread. No such labor-saving means will go begging when it is once brought within reach of the modern progressive housekeeper of moderate purse.

Australia and America Contrasted

BY HERBERT W. HORWILL IN YOUNG MAN.

Australia, while much smaller than the United States in population, is still greater in area. Its resources are as yet comparatively undeveloped. In many respects, as regards its system of government, its education, its literature, it occupies a middle position between England and the United States.

THE population of Australia is much less cosmopolitan than that of America. Distance and expense have made its recruiting from the Old World a slow process, and the former policy of assisted immigration, long since abandoned through the political preponderance of the labor party, did not at any time apply except to the British Isles. The country has been built up from the beginning by English, Scotch and Irish. During the Broken Hill boom almost every mine in that region bore a Scottish name. In Australia there is a saying: "When an Englishman goes abroad he is an Englishman still; when a Scotchman goes abroad he is a Scotchman still; when an Irishman goes abroad he becomes a policeman." This generalization would be equally true of America, where English and Scotch residents are found slow to acclimatise and not eager to take out naturalization papers, but where the police force in all its ranks is conspicuous by its brogue. Occasionally in the Southern World one comes across settlements from continental Europe, as in that district of South Australia which contains towns named Grunthal and Lobethal, with the

announcements at their railway stations printed in German as well as English. But these instances are sporadic, and insignificant in bulk. There is no German element in anything like such proportions as at Milwaukee or St. Louis or Cincinnati, nor can there be found in Sydney or Melbourne large Italian or Hungarian or Russian quarters as in New York or Chicago.

There is one form of alien immigration common to Australia and America, and equally unpopular among the politicians and working classes in both countries. It is significant that the man who uttered the first serious warning against the "yellow peril," the late C. H. Pearson, was a member of the cabinet of Victoria. In both countries Chinese exclusion is the prevailing policy, and into both of them John Chinaman manages somehow to make his way. The name of Hop Lee, or words to that effect, may be found over the most prosperous laundry in any township of the Australian bush and in any New England village. The Chinaman's patience and diligence as a gardener have literally made the desert blossom as the rose, both in the back dis-

tricts and northern territory of Australia and in the less developed regions of the American West, so that in many parts he holds the market as a truck farmer. In the same way he will settle down at a mine which the white man has abandoned, and will make a (Chinese) fortune out of it. His activity in carpentry and the allied crafts is not so frequently exhibited in America as in Australia. Criminal statistics show that he is a law-abiding citizen, but neither in San Francisco nor in Melbourne is Chinatown a savory place to visit. The Chinaman is not admitted to citizenship in either country.

The people whose fathers inherited Australia when the British themselves were immigrants—the aborigines—constitute no social or political problem, and very much the same might now be said of the remaining tribes of American Indians. Australia is happily free from what many careful observers regard as the most serious of all the national problems America has to face—the negro question.

In her system of government Australia is in some points nearer to England and in others nearer to America. Her Commonwealth of States corresponds to the Federal Union, but the governor-general—to say nothing of the sovereign of whose empire Australia forms a part—is not elected, like the president, by the popular vote. In the absence of an established church, in the adoption of manhood suffrage, in the payment of members of the various legislatures, in the direct election of the mayor of a municipality, and doubtless in other matters, the practice of Australia is similar to that of America, but English custom prevails in the possibility of electing to the legislature a man who does not reside in the consti-

tuency he represents and in the exclusion of all judicial offices from popular election. English precedent in the wearing of wig and gown, long disused in America except for the wearing of the gown in the Supreme Court at Washington, is still followed in the Australian law courts.

In education and literature the Australian states follow on British lines. Their universities are affiliated with Oxford and Cambridge, and there can be found in them few traces of the German influence dominant in the higher education of America. Their schools, too, are of the English model though allowing rather more room for experimental initiative. The Australians are more of a newspaper-reading people than the English, but their press is of the English rather than the American type. The "yellow journal," the "scare head," and the Sunday paper are unknown. As to language, Australia has made much fewer additions to the vocabulary than America. In some instances a novel word is common to both countries, as "buggy," a light vehicle for driving, and "shin-plaster," a slang term for paper money. More frequently different words have been coined for the same idea; the Australian "larrikin," for example, is practically equivalent to the American "hoodlum" and the English "hooligan," and the Australian "sundowner" to the American "hobo" and the English "tramp." The variation from the mother speech in accent and idiom is much less marked in Australia than in America, so that a native of England has no such difficulty in understanding and making himself understood in the former country as in the latter.

Various other comparisons in points of detail suggest themselves respecting the everyday life of the two peo-

ples. The torrid climate of the greater part of the Australian continent makes impossible such long-continued strenuous effort as is usual in the most prosperous sections of the United States. The one-storey houses, with a verandah round them, which are the normal style of building in every township, give the rural districts of Australia an American rather than English appearance. In such townships the practice of calling at the post office in the evening for one's letters is another American feature. The diet of the Australians varies in nothing from that of the English except in the large consumption of meat and the abundance of fruit. An American menu would be as strange in Melbourne or Sydney as in London. In spite of the high Summer temperature, iced water—which G. W. Steevens declared to be the chief American food next to air—is almost unknown in Australia, and ice cream is served in English quantities.

In one respect there is a striking difference between Australia and America, namely, in the numbers of the population. It must be remembered that America has had the start of Australia by several centuries, and as I have already pointed out, has had her census roll swollen by a continuous and vast immigration. It may surprise some readers to learn that there are four states of the American Union—New York, Pennsylvania, Illinois, and Ohio—each of which has a larger population than the entire Commonwealth of Australia. The most largely populated single state of Australia, New South

Wales, counts 340,000 less than Chicago, and the next in order, Victoria, is smaller than Philadelphia. Yet the total area of Australia exceeds by 2,000 square miles that of the whole of the United States, excluding Alaska and the over-sea possessions. An immense proportion of this territory consists of land which it has not yet been found profitable to turn to account, but the limits of occupation are being gradually pushed farther inland. To-day the flourishing city of Broken Hill in New South Wales covers the spot where one of the early explorers of the desert died of thirst. In South Australia we may now see flourishing wheat fields hundreds of miles north of what was once confidently declared to be the farthest conceivable limit of cultivation. If science can once make the Australian farmer and squatter victorious in his conflict with drought the prosperity of the commonwealth will advance by leaps and bounds. At present no American visiting Australia could fail to observe that its resources are by no means as fully developed as those of his own country. The fact is that Australia is still, comparatively speaking, in the pioneering stage. So perhaps there is no great extravagance, after all, in the prophecy of M. Adolphe de Circourt, reported in Senior's "Conversations" a generation ago: "Fifty years hence," he predicted, "the United States will be more populous, richer, and more powerful than any European community. Two hundred years hence Australia will be a greater nation or system of nations than the United States."

The Marconi Wireless Telegraph To-Day

AMERICAN INVENTOR.

When wireless telegraphy was first invented, the world became weary of hearing about the prowess of the young inventor, Marconi. To-day, so absorbed have we become in other things that he is all but forgotten and little is known of his work. But in the interim great progress has been made as the following article shows.

AT the present time, Marconi wireless telegraph stations are located almost everywhere throughout the civilized world, but it would require too much space to give an itemized list of all of them. Suffice it to say that there are thirty shore stations distributed throughout the British Isles; fifteen in Italy; three in China; two in Germany; two in the Congo Free State; one each in Belgium, Holland and Montenegro; nineteen in Canada, and five in the United States; these latter being located at Sea Gate, Babylon and Sagaponach, Long Island; Siasconset, Martha's Vineyard and South Wellfleet, Massachusetts; a grand total of seventy-nine shore stations in all. Three of these stations are provided with high-powered transmitters easily capable of sending messages across the Atlantic Ocean.

If we include the British and Italian navies, there are almost two hundred ships that carry Marconi apparatus, the Atlantic fleet of liners using this service alone numbering seventy vessels; the lines thus equipped are the Allan, American, Anchor, Atlantic Transport, Belgium Mail Packets, Cie Transatlantic, Cunard, Nordentscher, Lloyd, Hamburg-American, Red Star, White Star, Navigazione Generale Italiana, and the Holland-American Line. Other ships, both naval and merchant marine, are being fitted as fast as they can be built, and a ship that does not carry Marconi instruments may well be

said to be a menace to traffic on the high seas.

A method devised by the Marconi Company, by which an operator on any ship or at any shore station can learn instantly the approximate position of any ship at any time, proves that nothing has been left undone to insure a perfect service. When a telegram comes from either of the telegraph companies to any one of the shore stations for transmission to a ship at sea, the operator in charge, of course, must know somewhere nearly where the ship is at the time. This he is enabled to do easily and quickly by consulting his communication chart, which is printed and issued the first of each month. Should the ship he desires to communicate with be farther away than the range of his instrument will permit him to send, he looks up a ship that is somewhere between. Then he sends his message to the nearer vessel from whence it is in turn transmitted to the more distant one. In this way not only can any vessel be reached, but it may be kept in touch with throughout the entire trip. In addition to this relay telegraph service, messages may now be sent to certain ships carrying Marconi long distance receiving apparatus direct.

The certainty of transmission is even greater in wireless telegraphy than where a wire is used, for the slightest break in the wire will cut off communication, and wireless telegraphy has frequently been used

when all the laid wires have been blown down. The new method of telegraphy has likewise filled a void where cable links were lacking between lands; for instance, Montenegro has been connected direct with the mainland of Italy, Marconi stations having, by agreement with the two governments, been erected at Bari and at Antivari, so that a continuous public service is maintained across the Adriatic Sea. Like equipments are also installed between ports of Newfoundland and Labrador. A recent invention of Marconi, called an electromagnetic wire detector, makes it possible to receive messages as fast as an operator can send them, and as to the accuracy of transmission it is as perfect as the Morse system to-day. There has been little change in the transmitting apparatus in recent years, except that high-power generators have been substituted for those of low power, but the aerial wire system from which the wires are sent out on the one hand, and received on the other, have been greatly improved, thanks to Marconi's painstaking investigations and numerous experiments.

The Marconi wireless telegraph has closely followed the history of those other modes of transmitting intelligence electrically, i.e., the Morse telegraph and the Bell telephone, and the Marconi company are virtually repeating the history of the Western Union and the Bell companies. When Morse introduced his first working apparatus it was not long before he had a hundred imitators; Bell had to contend with numerous other men who invented telephones after he showed them how the thing was done; to-day Marconi is wrestling with the same class of questionable inventors.

As in the cases of Morse and Bell these "would-be's" are being eliminated as rapidly as the process of law will permit, and every decision yet handed down is a victory for Marconi, for his fundamental patents are so cleverly drawn that those who have devised modifications of the apparatus cannot get over, under, around or through the original claims.

For this reason the Marconi Company's future is an assured fact; just as the Western Union and the Bell telephone enjoyed a monopoly for many years and are practically in control of the situation to-day, so also will the Marconi Company have a virtual monopoly of wireless telegraphy for the next fifty years to come.

Marconi has allied with him some of the brainiest scientists and most brilliant inventors the world has ever seen. He has the able assistance of Professor Fleming, of Oxford University, and one of the three greatest physicists now living in England, while in this country Mr. Thomas A. Edison and Dr. Pupin of Columbia University have been retained as consulting engineers. Under these conditions it is not difficult to predict the future of wireless telegraphy; the only difficulty is that we are too apt to underestimate rather than overestimate its possibilities.

Trans-Atlantic and trans-Pacific cableless telegraphy is already an assumed fact; overland wireless communication for distances of 1,500 miles is a daily occurrence; and when selectivity shall have been more fully developed, who shall say that every telegraph line and every submarine cable shall not be relegated

to the scrap-pile, and messages sent to the remotest corners of the earth as easily as are now sent a thousand miles. There are few places on this round ball of ours that remain undiscovered; the North Pole is one of them; the Antarctic Circle is another. Heretofore the obstacles that have confronted the intrepid explorer have been not alone the ice and the cold, but equally as great as either of these is the isolation. Given continuous and certain communication with the civilized world and nothing can prevent those men, who are imbued with the daring spirit of Colum-

bus, from reaching the coveted goal. Peary carries on his ship, the Roosevelt, wireless apparatus, and has established wireless stations connecting with cables to the mainland. That he will reach the Pole is more than probable, but whether he does or does not, when the great discovery is made it will be found that wireless telegraphy will be a factor that assisted in its finding. There are a hundred other uses we could cite, but the foregoing will suffice. It is here to stay and the coming wireless age will be pre-eminently an era of Marconian telegraphy.

The Value of Attractive Stationery

BY C. W. WYLIE IN WORKER'S MAGAZINE.

Attractive stationery always appeals to the business man, and neat correspondence indicates a care and exactness that imparts confidence. Every business man should take a personal pride in the appearance of his stationery.

IN establishing an office and correspondence business of any kind the item of stationery becomes one of the first considerations, no matter how staid, sound, and conservative the proprietor may consider his business to be. One of the marked examples of the effect of stationery alone may be cited from the experience of a Chicago wholesale house some time ago.

Credit had been granted a new customer who was not rated with any of the commercial agencies. Some question arose over the action of the credit department and the chief credit man was called in. His explanation, too, was satisfactory when he showed the correspondence sheets of the debtor house.

"This is the stationery that ap-

peals alike to the greatest of fakers and to the best types of business men," he said, exhibiting the artistically engraved letter heads and return address on envelopes. "I have judged by the text of the letters that the correspondence is not of the faker class. The line of credit asked is not large and—well, virtually, I have given credit on the strength of the firm's stationery!"

The common sense argument for artistic stationery that shall please the eye is that, in its being artistic, the eye will be pleased. Every business man in the country who has experience of up-to-date correspondence from the outside will tell you how involuntarily a neatly written letter on an artistic letterhead appeals to him instantly. There is a subtle com-

pliment implied in the sending to him of a letter so well executed, and having in the letter material itself more than the cost of the postage. Evidently the writer has spent time in proportion upon the dictated matter, and has been as careful of the type-writing. From envelope, letterhead, through the dictated correspondence, to the final signature of the writer, the letter is a model.

No business man whose attentions are drawn to such a letter fails to appreciate it, and with the writing of every such letter the recipient is taking a lesson in the same school of correspondence and is becoming less approachable by means of the sloppy letter written upon any sort of cheap stationery.

Not many years ago a publishing house opened for business in an eastern city and set the pace for artistic stationery and artistically written correspondence. Its letters, both business and editorial, were revelations in the possibility of letter writing. Before the subject matter had reached the eye of the correspondent addressed he was interested in the perfect makeup of the letter, and long after the average reader of the letter was done with the subject matter he was holding the letter as an interesting exhibit of the art of letter making.

At one time in business it was not so much regarded whether a man

representing a business carried a printed card. To-day it is becoming almost imperative that a person representing a house by card shall carry with him the neatest and best results of the engraver's art.

In the first place the person sending in a card to another depends upon the card for his first introduction to the person whom he wishes to see. The makeup of the card will pass the same inspection that the dress and bearing of the writer will pass when he shall be admitted. And if in the first place his card shows a cheap, printed face, the man's chances for admission are poor. The average office boy outside a business man's office knows an engraved card at a glance and in many such offices he has a wide latitude in discrimination, based upon the fact that a card is cheaply printed.

If a new business needs stationery it needs good stationery. Good stationery may be defined as good enough for the purposes and the conservative requirements of the business. Extravagant show of stationery may be bad for a business, just as a cheap make-shift may be worse. But, all considered, the business which is represented in its stationery by artistic neatness and conservative good taste has a standing advertisement whose value cannot be overlooked.

Some Ideas in Men's Dress

BY ALFRED S. BRYAN IN SUCCESS MAGAZINE.

This noted writer on men's styles gives some pointers on the leading fashions in men's apparel that will be found of value to our male readers.

BECOMINGNESS is a marked feature of dress this Spring and Summer. Fads and follies are few, and the mode follows rational lines. Of course, there are bizarre forms and fabrics for those to whom dressing differently from the rest of us is the be-all and end-all of clothes, but these aberrations need not be considered here. The college boy is unappeasable in his pursuit of the new and the odd, and, with the sportiveness of youth, he sometimes does not pause to distinguish between novelty and eccentricity. However, he is "in a class apart," and, while the young man follows him to a certain extent, he does not follow him to the brink.

I have just returned from a trip to the university towns, and I must own that I was very favorably impressed with the well-set-up air of the American college boy, and the close and intelligent attention that he bestows upon dress. He is a bit of a faddist, to be sure, but he is a much more discerning faddist than he used to be. The expression of the wearer's personality in his clothes is the object which every truly well-dressed man seeks. A common standard would make our manner of dress colorless and insipid. Fortunately the mode is plastic and sanctions many little deviations that would not have been tolerated five years ago.

What has become of the covert top coat, without which no well-rounded wardrobe was complete? It is worn

this Spring, of course, but it has been shouldered aside by a newer aspirant for approval. This is the Chesterfield oversack, made of gray herringbone worsted, with a gray velvet collar to match, a deep centre vent, flaring skirts, and pressed side seams. This coat is about forty-two inches long, and fits snugly over the back. The covert top coat lost much of its distinctive character when it was cut to hug the figure last season. This detracted measurably from its comfort, and was wholly unacceptable. On the contrary, the short covert should always be fairly loose so that it may be slipped on and off with ease, and so that it will not bind. It is the handiest, "comfiest" coat for town wear and short trips, and I believe that its retirement is only fleeting. Young men, particularly, like it, and, after the fad for form-defining coats has waned, the good old covert will undoubtedly come into its own again.

Frock coats this Spring are made of both black and gray vicuna, about thirty-six inches long, and cut snug of waist and belled of skirt. Indeed, the whole appearance of the frock hinges upon giving it just a dash of jaunty grace. There are three buttons, the topmost of which is not supposed to be fastened. It may be added, in passing, that the frock is much less used than formerly, and is now reserved for occasions decidedly and strictly ceremonious. The morning coat has taken the place of

the frock for informal weddings, visits, and other functions of a like character. The braided morning coat has lost caste, and, in truth, it never had much to recommend it.

All morning coats should be cut to fit the figure closely, and gray is a color peculiarly well suited to Spring. Be it understood, I do not mean to imply that the frock is in any sense less fashionable than before. It is not. As long as grace and distinction count in the dress of men, the frock will be the preferred formal coat for day wear. But a somewhat informal spirit reigns just now in clothes, and hence the appearance of the morning coat as an alternate.

A notable departure for Spring is a collar made of the same fabric as the shirt. It is not, of course, a colored collar, as that is generally understood, but is made of white linen and has faint color lines that harmonize with the color of the body and bosom of the shirt. For example, if the shirt has blue stripes or figures, the "self" collar to accompany it shows faint tracings of blue on a

white ground. This idea is an ultra one not likely of general adoption, and I mention it merely as a manifestation of the drift of the mode in the club and college set.

Collars cut in front to resemble a "V" have won general countenance, if not for their comfort, at least for the fact that they offer something a bit different from the common run. When a high cut waistcoat is worn, that is, a waistcoat which shows over the lapels of the jacket, an extremely narrow four-in-hand tie is required for the best effect. These new four-in-hands are of the soft, folded-in sort, and such colors as moss green, wine red, swallow blue, helio and the like are approved. With the wing collar, however, a wide four-in-hand, measuring two, to two and one-half inches, is worn. The tabs on the modish wing collar for Spring are only moderately large, and not deep and flaring as they were for Winter. From indications, the fold or turn-down collar will be most favored for Spring, as it is more in accord with the informal "loungy" tendency always apparent as we near Summer.



Other Contents of Current Magazines.



In this department we draw attention to a few of the more important topics treated in the current magazines and list the leading contents. Readers of *The Busy Man's Magazine* can secure from their newsdealers the magazines in which they appear. :: :: :: :: ::

AMERICAN MAGAZINE.

A stirring new serial story, "The Mystery," by Stewart Edward White and Samuel Hopkins Adams, begins in the May issue. Harvey J. O'Higgins, a young Canadian, writes entertainingly of the life of the New York firemen.

Purged by Fire, by Harvey J. O'Higgins.

The Finger Tips of Allah, by Broughton Brandenburg.

Retorts Courteous and Discourteous, by John Elfreth Watkins.

Wu: The Personality Behind the Chinese Boycott, by D. R. Marquis.

AMERICAN INVENTOR.

Considerable space is devoted to wireless telegraphy in the May issue of the *American Inventor*, both editorially and otherwise. The first article takes up the "Rise of Wireless Telegraphy," accompanied by an interesting chart and some photographs.

High Frequency Currents at the Chicago Electrical Exposition.

Researches in Nerve Physics, by Albert F. Shore.

Launching of the Hendrick Hudson, by H. M. Riseley.

New French Wireless Fog Signal, by Frank C. Perkins.

Practical Uses of an Alarm Clock, by F. R. Honey.

Patenting an Invention, by W. H. Bach.

Making a Weathered, Oak Plate-Rack, by C. H. Fair.

APPLETON'S BOOKLOVERS.

The May number of *Appleton's Booklovers* is quite substantial and voluminous. The editor has succeeded in gathering together a great deal of valuable matter, while the stories provided are most meritorious.

The Truth about Panama. II. The Canal. By Henry C. Rowland.

The Morocco Conference, by Ion Perdicaris.

The Failure of the Educated American Indian, by Francis E. Leupp.

The Looting of Alaska. Aftermath and Retrospect. By Rex E. Beach.

The Code at West Point and Annapolis.

Modern Quarantine, by Alvah H. Doty.

The Ironic Monte Carlo, by Ward Muir.

The New Inland Sea in California, by Frank G. Martin.

The Industrial Transition of the United States, by Charles M. Harvey.

ARENA.

A lengthy article by Albert Brandt entitled "Criminal Wealth vs. Common Honesty" opens the May number of the Arena. It is a strong indictment of the illegal actions of the insurance companies.

Criminal Wealth vs Common Honesty, by Albert Brandt.

The Economic Struggle in Colorado, (continued), by J. Warner Mills.

The British Labor Party: Its Aims and Aspirations, by William Diaek.

Charles H. Grant: Marine Painter, by George Wharton James.

General Simon Bolwar: the Liberator of Northern South America, by Frederiek M. Noa.

What Our Universities are Doing for American Literature, by Edwin D. Schoonmaker.

The Value of an Immigrant, by Robert Baker.

A Primer of Direct Legislation. Chapter I. The Referendum.

ATLANTIC MONTHLY.

A most readable article on "Camping with President Roosevelt" from the pen of the veteran naturalist, John Burroughs, is to be found in the May Atlantic. Another eminent contributor to this number is Professor Goldwin Smith, who writes on "Froude." "A Lyrie," by Bliss Carman, is a delightful piece of verse.

Man and the Actor, by Richard Mansfield.

Camping With President Roosevelt, by John Burroughs.

The Critic and the Law, by Richard Washburn Child.

Life Insurance and Speculation, by Charles J. Bullock.

Baedeker in the Making, by James F. Muirhead.

Holidays and History, by William Roscoe Thayer.

Froude, by Goldwin Smith.

The Primitive "Tripper," by Herbert V. Abbott.

Recent Shakespearean Literature, by William A. Neilson.

The Act of Composition, by Wilbur L. Cross.

BOOK MONTHLY.

The May number of this charming literary periodical is as usual entirely readable.

Personal and Particular. Illustrated. A "Great Unknown"; Peeps at Mudie and His Readers.

Treasure Trove—Unpublished Verses by Crabbe.

Wanted—Humorists!

Man and Superman—the human side of Herbert Spencer.

BRITISH WORKMAN.

This interesting little publication always has two or three most readable articles and in the May number we find:

Men Who are Working for Others, by Rev. Prebendary Fox.

The World's Beautiful Industries. 3. Oriental Carpet Making.

The Making of Boots and Shoes.

The Flint Workers of Brandon, by Wood Smith.

CANADIAN.

Readers of the Canadian Magazine will find several valuable articles in the May number. The first of a

series of reminiscent articles by J. E. B. McCready entitled "When the Dominion was Young" appears. These articles give promise of being exceptionally interesting.

Trent Valley Shooting and Fishing Grounds, by Bonnycastle Dale.

A New York Season of Drama, by John E. Webber.

Winning a Seat in the Imperial House, by A. C. Forster Boulton.

Nova Scotia and Imperialism, by F. Blake Crofton.

One Hundred Years in British Columbia, by Harold Sands.

Last Royal Funeral at Mandalay, by Helen Bernard.

When the Dominion was Young, by J. E. B. McCready.

CASSELL'S.

Rider Haggard's African romance "Benita" is concluded in the May number of Cassell's. In addition there are five clever short stories. A number of interesting illustrations accompany a paper on the work of J. S. Sargent, R.A.

England's Loss and Gain, by Frank Banfield.

The Play of the Hand at Bridge.

The Personnel of Parliament, by David Williamson.

Work and Play in Mid-Atlantic, by W. B. Northrop.

CASSIER'S.

In the May issue the place of honor is given to an admirably illustrated article on "Motor Omnibuses for Public Passenger Service." The other contents of the number are all calculated to interest the engineer.

Motor Omnibuses for Public Passenger Service, by R. G. L. Markham.

Exploiting an Invention, by George Wetmore Colles.

The Electro-chemical and Electro-metallurgical Industries in 1906, by John B. C. Kershaw.

The Metric System Fallacy. Opinions of Engineers and Manufacturers.

New Business for Electric Central Stations, by F. M. Kimball.

British Locomotive Engineering. II. By Charles Rouss-Martin.

The Advantages of Direct-Current Transmission, by Alton D. Adams.

The Business Doctor, by J. F. Gairns.

Power House Economics, by W. P. Hancock.

CENTURY.

The May Century is a garden number, graced with many charming pictures and descriptions of famous gardens. The other contents are equally interesting.

The Gardens of Cornish, by Frances Duncan.

The Architectural Treatment of a Small Garden, by Roger Riordon and Frances Duncan.

The Garden of the Sun. II. Route Notes in Sicily, by William Sharp.

The Old Garden at Mount Vernon, by Frances E. Leupp.

Where to Plant What, by George W. Cable.

Reflex Light from Africa, by Charles Francis Adams.

An Ancient Garden, by Helen Evertson Smith.

The Royal School of Embroideries in Athens, by Anna Bowman Dodd.

The Training of the Human Plant, by Luther Burbank.

Lincoln the Lawyer. VI. Conclusion, by Frederick Trevor Hill.

CHAMBERS'S JOURNAL.

A new serial, "The Twenty-Second Karl," by George Frederick Turner, begins in the May number. As usual the issue is brimful of readable articles on all manner of topics.

How Criminals are Caught, by E. J. Prior.

The Bulwark of Our Indian Empire, by R. T. Halliday.

Life as an Engineer.

Other Times, Other Manners, by Percy Fitzgerald.

Port Soudan in the Making.

Our Neglected Canals.

Two Masters of Fence, by "Thor-manby."

The Coming of the Animals.

English Antiquities, Genuine and Spurious, by George Clinch.

The Humorous Side of Strikes.

The Humorous Side of Monte Carlo, by Ward Muir.

COLLIER'S.

April 21—"Under the White Terror," by Albert Edwards; "Up for Trial," by Arthur Train.

April 28—"The Great American Fraud"; "The Man with the Muck Rake," by Samuel Moffett; "Under the White Terror," by Albert Edwards; "The Changing Order," by W. J. Ghent.

May 5—"San Francisco in Ruins," by Frederick Palmer; "The Story of an Eye-witness," by Jack London; "The Old San Francisco," by Samuel Moffett, with many pictures of the city in ruins.

May 12—"A Stricken City Undismayed," by Frederick Palmer; "An Ideal San Francisco," by Samuel Moffett; "The Eruption of Vesuvius," by Robert H. Schauffer.

CONTEMPORARY REVIEW.

As usual the May number of the Contemporary contains authoritative articles on the various questions that exercise the mind to-day. The contributors are all distinguished men.

The New Education Bill, by Lord Stanley.

In the Courrieres Country, by Lawrence Jerrold.

Trade Disputes, by L. A. Atherley Jones.

China and the West, by Dr. Timothy Richard.

Irish National Imperialism, by Professor Posnett.

The Moral Consciousness of Jesus, by W. D. Mackenzie.

In the Footsteps of Ramon Lull, by Havelock Ellis.

A Native Council for India, by Justice Nair.

Pre-Raphaelitism and the Present, by L. March-Phillips.

The Parson and His Flock, by Lieut.-Col. Pedder.

Foreign Affairs, by Dr. E. J. Dillon.

CONNOISSEUR.

The colored illustrations in the May Connoisseur are "The Billeted Soldier's Departure," "The Soldier's Return after George Moorland," and "Playing Shuttle-Cock." In the Connoisseur competition, two prize pictures are reproduced and two pictures from the Stock Exchange Art Society Exhibition. Literary contents:

The Marquess of Bristol's Collection. II. By Leonard Willoughby.

Silhouettes, by Mrs. F. Nevill Jackson.

The Decorative Value of Old China, by Olive Milne Rae.

The Directoire and the First Empire, by Gaston Gramont.

The Art of Decoration as Applied to Architecture and Furniture, by A. Roumy.

The Norwich School of Painting Reviewed, by W. F. Dickes.

Stamp Notes.

CORNHILL.

Quiller-Couch's serial, "Sir John Constantine," nears its conclusion in the May Cornhill, while Stanley J.

Weyman's romance, "Chippinge," reaches an interesting stage. The number contains several entertaining articles.

Prehistoric Man on the Downs, by A. J. and G. Hubbard.

The Simplon Pass and the Great Tunnel, by Francis Fox.

Lord Craven and Claverhouse: an imaginary conversation, by Dora Greenwell McChesney.

Venomous Serpents, by Claude E. Benson.

A French Traveler in Charles II.'s England, by D. K. Broster.

The New Chemistry. IV. Carbon and the Shapes of Atoms, by W. A. Shenstone.

Chimaera and Phaselis, by D. G. Gogarth.

COSMOPOLITAN.

David Graham Phillips' attack on the United States Senate occupies a prominent place in the May Cosmopolitan. There are some interesting illustrations in connection with Broughton Brandenburg's article on "Racial Traits in American Beauty," as well as in the stage department.

The Message of the Dome, by Bailey Millard.

The Treason of the Senate, by David Graham Phillips.

Racial Traits in American Beauty, by Broughton Brandenburg.

Our Pampered Actors and Their Concension, by Alan Dale.

Yachtswomen of America, by Gertrude Lynch.

Polo Made Plain, by J. J. McNamara.

CRAFTSMAN.

In the May Craftsman we are treated to a number of fine illustrations, including Indian paintings by Deming, and Japanese landscapes. Near-

ly all the articles are accompanied by illustrations, which add greatly both to the appearance and value of the number.

What is Architecture: A Study of the American People, by Louis H. Sullivan.

Folk-Lore of a Vanishing Race Preserved in the Paintings of Edwin Willard Deming, by P. T. Farnsworth.

The New-Old School of Japanese Art. Landscapes that have the modern spirit with traditional methods.

Artist and Silversmith.

Work of the People's Institute, as originated and carried on by Charles Sprague Smith, by Edgar A. Russell.

Japanese Architecture and its Relation to the Coming American Style.

An East Side Music School, by Katharine M. Roof.

Window Gardens and Vines.

Handicrafts Back in English Peasant Homes, by Alice Dinsmoor.

CRITIC.

The May Critic is notable for its illustrated article on "Great Britain's Literary Government," by Walter Littlefield. In connection with it appear full-page portraits of Augustine Birrell, Sydney Buxton, John Morley, James Bryce, Richard B. Haldane, Winston Spencer Churchill, John Burns, Earl of Crewe and Sir H. H. Fowler.

Art Appreciation, by Okakura-Kakuzo.

A Concord Note-Book, by F. B. Sanborn.

The Critic's Gallery of American Art. XV. Thomas W. Dewing.

Great Britain's Literary Government, by Walter Littlefield.

Afternoon Calls, by Mrs. John Lane.

Love Letters of Mme. de Staël to Benjamin Constant. III.

Tennyson's Annotations to "In Memoriam," by W. J. Rolfe.

Homilies and Critical Studies, by H. W. Bynton.

Fiction and Reform, by Elliott Flower.

ENGLISH ILLUSTRATED.

The artist, whose work is described and illustrated in the May number, is L. Campbell Taylor. There is also an interesting article in this issue, appreciative of the work of Herbert Beerbohm Tree, the actor. The department devoted to the London stage contains some choice photographs.

The Art of L. Campbell Taylor, by W. Calvert.

The Three Sons of Napoleon. From the French.

Hailstones as Big as Potatoes.

Herbert Beerbohm Tree. An appreciation, by Austin Fryers.

Three Herefordshire Churches, by Charles Hiatt.

EVERYBODY'S.

In the May number begins Lindsay Denison's record of his investigations at Panama, which have been sanctioned by no less a person than President Roosevelt. "The Spoilers," by Rex E. Beach, is concluded. There are more contributions of the exposure kind from Upton Sinclair and Thomas W. Lawson.

Making Good at Panama, by Lindsay Denison.

The Condemned Meat Industry: A Reply to J. Ogden Armour, by Upton Sinclair.

The New President of France, by Vance Thompson.

The Coal Trust, the Labor Trust and the People who Pay. II. By Hartley Davis.

Fools and Their Money: Some

After-Claps .of Frenzied Finance, by Thomas W. Lawson.

FORTNIGHTLY REVIEW.

Leo Tolstoy's work "The Divine and the Human" has been translated for the Fortnightly and begins in the May number. This number is notable for the variety of interests which it covers.

The Emperor of Japan, by Mrs. Hugh Fraser.

The Parting of the Ways, by an Old Tory.

Mr. Balfour's Fiscal Leadership, by W. Phillips Groser.

The Fetish of Organization, by Observer.

Heinrich Heine, by H. B. Samuel.

The Educational Fiasco, by Kenelon D. Cotes.

H.M.S. Dreadnought, by Pompeius.

The English Stage in the 18th Century. I. By H. B. Irving.

The Negro Problem Stated, by Wm. F. Bailey.

Mr. J. M. Barrie's Dramatic and Social Influence, by Edith Browne.

The Cradle of Modern British Art, by Julius M. Price.

The Algeciras Conference, by Budgett Meakin.

The Children's Purgatory.

GRAND.

In the series of "My Best Story and Why I Think So," F. Anstey contributes his story "A Matter of Taste." In the series, "The Secret of Success," a number of English admirals discuss "Success in the Navy."

The Profession of Art in England, by F. W. Saunderson.

Women's Rights and the Right Women, by Emil Reich.

The Secret of Success. IV. Success in the Navy.

Cockney Children's Games and Chanties, by Edwin Pugh

Fortunes in Waiting for the Ingenious, by T. C. Bridges.

Under the X-Rays. 16. Degrees that Degrade, by G. Sidney Paternoster.

Sir Henry Irving, by Joseph Hatton.

Statesmen's Blunders, by A. T. Story.

How Pedigrees are Faked, by W. Gordon.

The Natural and the Supernatural, by F. Podmore.

HARPER'S.

The May issue of Harper's Magazine contains many interesting features, not the least pleasing being the number and quality of the illustrations. Fiction is contributed by Justus Miles Forman, Alice Brown, Margaret Deland, Nelson Lloyd, James B. Connolly and other noted writers.

My Explorations in Unknown Labrador, by Mina B. Hubbard.

The Blubber Hunters. II. Taking Whales, by C. W. Ashley.

A Return to Mexico, by Thomas A. Janvier.

New York Revisited, by Henry James.

How Men Feel in Battle, by S. H. M. Byers.

Feeding the Mind, by the late Lewis Carroll.

Is the Human Race Mortal? by C. W. Saleeby, M.D.

IDLER.

"Intervention," a novelette by Eden Phillpotts, begins in the May Idler, which numbers in its table of contents several clever short stories, besides H. C. Bailey's serial, "Spring-time."

The Land of Good Cooks, by Francis Miltoun.

The Land of Windmills.

Ireland's Ancient Abbeys, by Lady Onslow.

The Peak in Fiction and a Derbyshire Novelist, by J. B. Hobman.

The Idler in Arcady, by Tickner Edwards.

The Most Beautiful Flower in the World, by "Horticulturist."

LIPPINCOTT'S.

The novelette in the May number of Lippincott's is a strong detective story by Neil Monroe Hopkins, entitled "The Strange Case of Dr. North." There are also in this number nine short stories, a number of poems and,

President Lincoln: Intimate Personal Recollections, by Mrs. General Pickett.

Sappho: With some new translations, by William Cranston Lawton.

McCLURE'S.

Rudyard Kipling begins his new serial of Ancient Britain in the May number under the title "Robin Goodfellow—His Friends." In the same number the two Canadian writers, Margaret and Arthur E. McFarlane, have a very amusing story. The other fiction in the number is good.

Reminiscences of a Long Life. VII. Flight from the Fatherland. By Carl Schurz.

The Story of Life Insurance. I. The Surplus: The Basis of Corruption, by Burton J. Hendrick.

Milton, by George Edward Woodberry.

An Actress—on Guard, by Clara Morris.

MONTHLY REVIEW.

The Monthly Review for May has some interesting features, which are handled in a light and easy style. Horace Vachell's interesting serial,

"The Face of Clay," reaches its conclusion.

Parliament and Parties, by Ronald McNeill.

Japanese Statesmen of Yesterday and To-day, by M. C. Fraser.

Indentured Labor Under British Rule, by R. A. Durand.

Spiritualism, by Isabella C. Blackwood.

The Misuse of Titles and Precedence, by Manteau Rouge.

The Haunted Islands, by Lady Gregory.

Accursed Races, by Frederick Boyle.

MUNSEY'S.

As usual, the editor of Munsey's has provided an excellent bill of fare in his May number. There is variety without mediocrity and the articles of a more sober nature are relieved by a plentiful supply of light fiction.

A Painter of Fair Women, by Christian Brinton.

The Romance of Steel and Iron in America II., by Herbert N. Casson.

John Bigelow at Eighty-Eight, by Clifford Smyth.

The American Peril, by Vance Thompson.

Henry Irving's Successor, by Clay M. Greene.

The English in America, by Herbert N. Casson.

Mrs. Leslie Carter, by Matthew White, jr.

The Real Annie Laurie, by Katherine E. Thomas.

The New King of Denmark, by Frederic Austin Ogg.

The Life of a Neighboring World, by Waldemar Kaempffert.

NATIONAL.

The May number of the National opens with the customary article by Joe Mitchell Chappe on "Affairs at

Washington," followed by a number of stories and articles.

Mexico's War Minister Greets Northern Neighbors, by General Bernardo Reyes.

Haydon Jones, Newspaper Artist, by Ethel Armes.

Wanted: Cities with a Sane Ideal, by Charles Ferguson.

Adventures of a Special Correspondent, by Gibeon Willets.

NEW ENGLAND.

Portraits of seven New Englanders of prominence appear at the front of the May number. The first article deals with the revival of the whale industry. There is also an interesting paper on "The Story of the Goblet," illustrated.

The Whale and the Whaleman, by William S. Birge.

Ancient Pemaquid: the Jamestown of New England, by H. O. McCrillis.

Legends of Old Newgate, by George H. Hubbard.

Marketing of Fake Masterpieces, by Frederick W. Coburn.

Story of the Goblet, by Pauline Carington Bouve.

The Despotism of Combined Millions, by John W. Ryckman.

The Works of the Watch City. Walham. By Percival R. Eaton.

PACIFIC MONTHLY.

The May issue of the Pacific Monthly is devoted to Japan. Many interesting illustrations of things Japanese accompany the various articles.

The Spirit of Japan, by Edwin Emerson, jr.

The Color Prints of Japan, by Alma A. Rogers.

Japanese Sentiment after the War. A Symposium.

The Little Brown Man as He Is, by Dorothy T. Dutton.

Courtship and Marriage Customs of Japan, by G. Mukerji.

Cliff Dwellers of the Southwest, by George W. James.

The Ku Klux Klan, by Minnizelle George.

Abraham Lincoln, by George H. Williams.

PALL MALL.

A new series of romances under the general heading of "Raoul, Gentleman of Fortune," by H. C. Bailey, begins in the May number, which also contains another of Cutcliffe Hyne's stories of Commander McTurk. Examples of the work of Josef Israels lend interest to the number.

The King of the Desert. H.H. the Maharajah of Bikanvi, by Ian Malcolm.

The Trail of the Pioneer. II., by Alex. Macdonald.

The Story of a Puppet-Show. How a little French boy founded the finest marionette-theatre in the world, by Frederic Lees.

Derby Day, by Frank Richardson.

A Group of Derby Types, by J. P. C.

Tournaments as They Were, by Viscount Dillon.

"Mr. Punch" and the Treasury Bench. A Talk with Mr. Linley Sambourne, by B. Phillips.

PEARSON'S (ENGLISH).

The May number is a bright, well-illustrated production. Its most notable feature is a paper by Field-Marshal Lord Roberts on "How to Make a Nation of Marksmen." There are the usual number of short stories.

The Art of the Age. Illustrated.

How to Make a Nation of Marksmen, by Field-Marshal Lord Roberts.

When the King Goes to the Play, by Rudolph de Cordova.

When Nature Snowballs and Toboggans, by Charles Ray.

Masters of Black and White. II. Mr. Tom Browne. By Gordon Meggy.

The Life Story of a Jay, by S. L. Bensusan.

PEARSON'S (AMERICAN).

In the May Pearson, James Creelman occupies first place with an inquiry into the workings of the great money power in the United States, as exemplified in the recent life insurance scandals. The number contains several stories.

Tragedies of "The System", by James Creelman.

The University of Chicago, by Martin M. Foss.

The Astounding Development of the Automobile Industry in America, by Herbert N. Casson.

A Sailor of Fortune, by Albert Bigelow Paine.

QUARTERLY REVIEW.

A strong table of contents is to be found in the April issue of the great Quarterly Review. This splendid publication keeps well apace of the times and gives its readers the advantage of admirably thought-out opinions on the problems of the day. Its literary tone is high.

The Old and the New Whigs.

Shakespeare's Anthony and Cleopatra, by A. C. Bradley.

The Pre-Raphaelite Brotherhood.

The Government and South Africa.

Some Letter-Writers, Ancient and Modern.

Robert Candlish and the Disruption of 1843.

The Literature of the French Renaissance, by P. F. Willert.

The Art of Gambling.

Trade-unions and the Law.

A Plea for Cambridge.

Pascal's Apologia, by the Rev. M Kaufmann.

An Indian Renaissance, by T. Morison.

The Political Situation.

The Education Bill.

RECREATION.

In the May number of Recreation there is an excellent article "Glimpses of Newfoundland," describing with many illustrations a trip to and across the island. The May number is as usual an interesting out-of-door publication.

California Trees and Birds, by E. J. Roorbach.

Glimpses of Newfoundland, by L. P. Natacap.

Platte, the Wonder-Horn of Angling, by L. F. Brown.

Prehistoric Animals of Alaska, by F. H. Chase.

Throwing the Squaw Hitch, by Dan Beard.

REVIEW OF REVIEWS.

The May issue of the Review of Reviews was the first issue of any magazine to treat of the San Francisco calamity. The number contains some strong features in addition, notably a contribution from P. T. McGrath, of Newfoundland, on "New England's Deep Sea Fishing Interests."

George F. Baer: Master-Spirit of the Anthracite Industry, by Frederic William Unger.

"Immediate Municipal Ownership" in Chicago a Year After, by an Impartial Observer.

Congress and the Consular Service, by J. Sloat Fassett.

New England's Deep-Sea Fishing Interests, by P. T. McGrath.

The New Era in Colombia, by Francis P. Savinien.

The Farm Mortgage of To-Day, by C. M. Harger.

The Demand for Better School Reports, by W. H. Allen.

The New York Post Office: Its Achievements and its Needs, by Louis E. Van Norman.

From New York to Paris by Rail, by H. Rosenthal.

Railway Rates and Court Review, by Hon. C. A. Prouty.

The Vital Question of Differentials, by J. W. Midgley.

ROYAL.

Bright and readable as ever are the contents of the May Royal. There are the usual number of short stories and the customary supply of illustrations.

Human Animals: How the Stage Animal Makes Up, by F. E. Baily.

Beauty and the Woman, by Mrs. Pomeroy.

Survivors' Tales of Great Events.
XVI. **Indian Mutiny**, by Walter Wood.

A Police Inspector's Day, by an Old Jewryman.

The Romance of the Y.M.C.A., by H. J. Holmes.

SATURDAY REVIEW.

April 7—"The Government and the Colonies," "The Outcome of Algieras," "The New Rules of Procedure," "Chemists and Quacks," "The Purchase of Pictures for the Nation," "The Decaying Art of Singing," "Water-Colors at the Carfax," "From a Duffer's Point of View," "Feudal Shrewsbury."

April 14—"The Endowment of Non-conformity," "The Titan's Struggles," "East Meets West," "The Hungarian Solution," "Good Friday," "Passion in Music," "A Novel Complaint," "Between Two Halls," "Cloud-Gazing."

April 21—"The Clamor of Sectarianism," "The Aftermath of Algeciras," "Pull Senate, Pull President," "Easter in the Fields," "Some Literary Recollections of a Golden Age," "Misplaced Sanitation," "The National Gallery," "Dorothy o' the Bowery."

April 28—"Mr. Balfour and Trade Unions," "The 'Raggin' Case," "The South African Native Question," "Simple Biblical Teaching," "The Windsor Whistlers," "A Musical Pitfall," "Some Literary Recollections of a Golden Age," "The Gardener's Balance."

SCRAP BOOK.

This voluminous production contains enough odds and ends of information to equip a man for life. All sorts of subjects are embraced and all manner of tastes are catered to. A department takes up "The Latest Viewpoints of Men Worth While," another discusses "What the Big Newspaper Writers are Saying," a third is devoted to the stage. There is a plentiful supply of fiction and poetry and a vast amount of miscellaneous matter. Of special articles there are:

The Personal Character of the Czar, by Frank M. White.

Creating Wealth From Waste, by Eugene Wood.

Historic Bells of America.

Uncle Sam, Foster-Father of Fishes, by Samuel G. Blythe.

The Nation's Conscience Fund.

The Passage of the Boarding House, by James L. Ford.

SCRIBNER'S.

To Canadians the most notable article in the May number of Scribner's is Major Percy Girouard's description of "The Railways of Africa," in the series of "The Rail-

ways of the Future." The Canadian engineer-soldier has acquitted himself well in the task he undertook. Other articles in the number are:

Vanishing Indian Types—the Tribes of the Southwest, by E. S. Curtis.

A Corner of Normandy, by Mary King Waddington.

The Railways of Africa, by Sir Percy Girouard.

General Sam Houston and Secession, by Charles A. Culberson.

At the Baths of Lucca, by Neith Boyce.

SPECTATOR.

April 7—"Where are the Conservatives?" "Canada and the United States," "Europe," "Wrongheaded Imperialism," "Improving Away Landlords," "Rich and Poor," "Back to the Land—and the Telephone," "Ants in Captivity."

April 14—"The Education Bill," "The Hapsburg Success," "Lord Kitchener and the Indian Army," "The Cabinet and the Majority," "Men and Volcanoes," "Paradise," "Two Ladies and a Philosopher," "The Possibility of the 'Country Club' in England."

April 21—"President Roosevelt on Multi-Millionaires," "The Zululand Trouble," "The Kaiser at the Wire," "A Criminal Appeal Court," "Science and Public Life," "Fieldcraft and the Towns-men," "The Lucky Bird," "An Outpost in Asia."

April 28—"The Nonconformists and the Bill," "Churchmen and the Bible," "The Defence of Egypt," "The Strikes in France and the Elections," "New China for Old," "Trade-Unions and the Law," "Christianity and the Working Classes," "San Francisco."

ST. NICHOLAS.

The May St. Nicholas is a veritable treasure trove to the young reader,

with its many excellent stories, its illustrations and its competitions. To us it seems as if the magazine were growing better every issue.

A Little Indian School, by T. R. Porter.

The Boys' Life of Abraham Lincoln, by Helen Nicolay.

The Stove. II. (Stories of Useful Inventions), by S. E. Forman.

Nature and Science for Young Folk. (Illustrated).

STRAND (ENGLISH).

The Strand is, at present running serials by A. Conan Doyle and Rudyard Kipling, which give an added interest to its contents. In the series of "Portraits of Celebrities at Different Ages," we are given portraits of the King and Queen of Norway in the May number.

Phantasms: Some Remarkable Instances of Ghostly Visitations, by Harold Begbie.

Across America by Motor Car, by Frederick A. Talbot.

Dress Agencies.

Some Rediscovered Paintings of Great Artists, by Ronald Graham.

The New Theory of the Moon, by W. Kaeinpfert.

SUCCESS MAGAZINE.

The Success Magazine keeps up to its standard remarkably well. The May number is as good as anything we have yet seen. With story writers of the ability of Ellis Parker Butler and David Graham Phillips, the fiction side is well supplied, while the ranks of special writers are equally well filled.

The Genuis of George Westinghouse, by Arthur Warren.

Fighting the Telephone Trust, IV., by Paul Latzke.

The Plays of a Season, by Porter Emerson Browne.

The Habit of Governing Well—Manchester, by Samuel Merwin.

The Varied Activities of New York, by Remsen Crawford.

The Cigarette, by Orison Swett Markden.

The Young Man Entering Business, by Henry C. Walker.

WATSON'S.

The May issue of Watson's Magazine is an ordinary number, with the usual supply editorials by Thomas E. Watson. There are two or three stories.

The Philadelphia Vigilantes, by Reginald W. Kauffman.

A Solution of the Railway Problem, by James B. Lloyd.

Commonsense, by W. D. Wattles.

Vikings of Industry, by Robert Watson.

Overcapitalization of Railroads, by William D. Marks.

What Life Insurance Is, by Allan L. Benson.

Bucket-Shop Gambling, by John A. Boykin.

WESTMINSTER.

The May Westminster has several readable articles in its table of contents. As a serial it is running Marian Keith's new story, "The Silver Maple." This will soon be followed by "The Doctor," by Ralph Connor.

South Africa To-Day, by Peter Milne.

Fire-Ranging in New Ontario, by W. S. Wallace.

Romance and Beauty of the St. Lawrence V., by Robert Haddon.

Some Summer Residents, by J. A. Munro.

Education in Quebec, by Principal Shaw.

WINDSOR.

"The Art of Mr. Herbert Schmalz" occupies the place of honor in the May Windsor, accompanied by a number of reproductions of the artist's work. There is a story by Robert Barr and an installment of Anthony Hope's serial, "Sophy of Kravonia."

The Art of Mr. Herbert Schmalz, by Austin Chester.

Chronicles in Cartoon. VI. The Army, by Fletcher Robinson.

Beginnings of Fame, by Agnes Repplier.

Concerning Bicycles, by Mrs. H. H. Penrose.

The Mallard and His Mate, by S. L. Bensusan.

WOMAN'S HOME COMPANION.

This admirable monthly has now attained to a premier position among ladies' journals. It not only provides good stories and housekeeping hints, but also supplies articles of a valuable kind on all manner of topics.

Is the World Growing Better? by Lyman Abbott.

American Dollars and "Faked" Antiques, by W. G. Fitz-Gerald.

Adventures and Perils of the News Photographer, by W. G. Fitz-Gerald.

Electricity in the Kitchen, by Christine T. Herriek.

Landscape Gardening for Small Incoming, by Samuel Howe.

The Tale of a Persian Rug, by Anna S. Remy.

Women and Proof-Reading, by Anna S. Richardson.

The Easily Acquired Art of Stenciling, by Mabel Tuke Priestman.

WORLD TO-DAY.

Page portraits of Senators Aldrich, Lodge, Hopkins and La Follette. ap-

pear as frontispieces to the May issue, which contains a sensible article on the Senate by C. Arthur Williams. The number has the customary number of useful articles.

St. Louis After the World's Fair, by Rolla Wells.

Shall we Still Insure Ourselves? by Elliott Flower.

A Discussion of the Athletic Situation, by W. T. Reid, jr.

The Congo Museum, by Frederick Starr.

The Completing of the Mississippi, by Aubrey Fullerton.

The Truth About the Senate, by C. Arthur Williams.

Has the Speaker Too Much Power? A Symposium.

The "Sitting Editor" and the Russian Police, by Ernest Poole.

The High Railroads of the World, by Eugene Parsons.

Modernizing Jesus of Nazareth, by John P. Lenox.

Rolla Wells, Mayor of St. Louis, by a St. Louis Republican.

A Sailor of Fortune, by Robert W. Neal.

Work-Horse Parades, by Paul P. Foster.

WORLD'S WORK (AMERICAN).

The packing industry comes in for severe criticism in the May World's Work, and not only is it attacked in words but by means of pictures, taken from actual photographs. The other contents of the number are equally interesting.

The Hostility of China, by Kang Yu Wei.

Selling Diseased Meat.

A Picture of Meat Inspection, by William K. Jacques.

The Unhealthfulness of Packingtown, by Caroline Hedger.

The Failure of Government Inspection, by Thomas H. McKee.

The Corn Gospel Train, by Eugene P. Lyle.

The Effeminization of the United States, by Josephine Conger-Kan-
eke.

Shall Niagara be Saved? by French Strother.

The Trapper's Real Character, by W. H. Wright.

A Personal Study of the Japanese Emperor, by Mrs. Fraser.

A Colossal Fabric on Franchises.

The Real Nature of the Moros, by "Lloyd Buchanan."

A Young Man and His Money.

WORLD'S WORK (ENGLISH).

The most important article in the May World's Work is on the proposed channel tunnel between England and France. Sir W. H. Holland, M.P., discusses it from the business man's standpoint and George Turnbull from the engineering standpoint. Other articles:

Motors and Men. The Preparation for a Motor Tour, by Henry Norman, M.P.

The Art of Accurate Shipbuilding, by Harold J. Shepstone.

Opening up an English County.

The Excellent Herring, by Guy Speir.

Wanted, Some Additions to the Alphabet.

The Rotation of the Earth.

The Age of Concrete, by "Home Counties."

The School Doctor in Germany, by William H. Dawson.

What the Law has done to House the Irish Laborer, by James Long.

Tobacco Planting in Sumatra, by W. Dingwall Fordyce.

The Slaughter-Houses of Paris, by Frederic Lees.

YOUNG MAN.

The praises of this excellent publication have been sung by us before, but a glance over the May issue compels us to repeat our former words of appreciation. The Young Man is all that its name implies and more, and to the youth of this and other lands it should prove most helpful.

Sir Edward Clarke, K.C., M.P., by Ernest Jenkins.

Social Problems. After Prison—What? by an Ex-Convict.

A Sheffield Blade, by John Mastin.

The Sorrows of India. 1. How we won India. By Dr. Charles Aked.

Australia and America. A Comparison and a Contrast, by Herbert W. Horwill.

The Book for the Month. "The Jungle."

YOUTH'S COMPANION.

April 19—"Improving the Wheat Crop," by W. M. Hays. Stories by Franklin W. Calkins, Martha B. Dunn, and Arthur S. Pier.

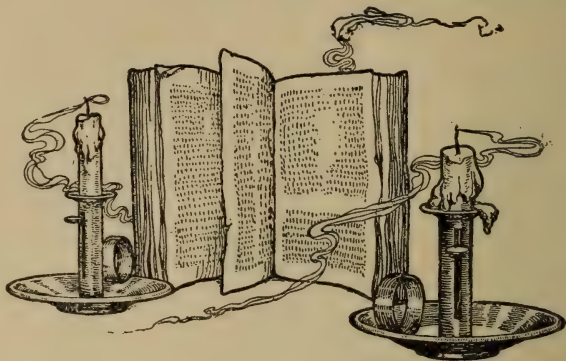
April 26—"Mosquitoes and Minnows," by Margaret Deland; "The Wild-Flower Garden," by Ida D. Bennett and stories by Charles N. Hood, Arthur S. Pier, Henry K. Webster, and Judith Graves Waldo.

May 3—"Salmon Fishing in a Town," by Robert Grant; "The Poison Ivy," by Annie Oakes Huntingdon and stories by Albert W. Tolman, Adeline Knapp, Charles Adams and Ralph D. Paine.

May 10—"Improving the Corn Crop," by W. M. Hays, and stories by Franklin Welles Calkins, Alice L. Lee, Grace McGallagher and Adeline Knapp.

The Busy Man's Book Shelf

Some Interesting Books of the Month Reviewed



RECENT FICTION.

Alton of Somasco. By Harold Bindloss. Toronto: McLeod & Allen. Cloth, \$1.25.

There is a purpose and strength about this story of the great-hearted British Columbia ranchman, which is lacking in the sensational fiction of to-day. We feel a personal interest in the hero, whom we would willingly count as a friend, and it is for this reason that we follow his fortunes with a more intense concern than were he merely an impersonal figure-head. Apart from the skill displayed by the author in characterization, he has succeeded in painting a truthful picture of the hard life of the ranchers, not only in their struggles against the might of nature but in their contests with unprincipled promoters. The book is a valuable addition to the literature of Canada.

If Youth but Knew. By Agnes and Egerton Castle. Toronto: The Macmillan Co. of Canada. Cloth, \$1.50.

This story of the Kingdom of Westphalia in the days of Jerome possesses a quaint and delicate charm that is entirely lacking in most romances of to-day. The tale concerns the fortunes of a young Austro-English nobleman, who, under the guidance of an eccentric old musician, is introduced to a young maiden of noble birth. The vicissitudes of their early love, happily overcome through the fatherly care of the old man, give to the story its necessary motif.

The Challenge. By Warren Cheney. Toronto: McLeod & Allen. Cloth, \$1.25.

The scene of this pretty love story is laid in Alaska—a land but little exploited by the novelist. A community of Russian fur-trappers furnishes the stage upon which the little drama is enacted, and the mysterious forces of Nature play their part in influencing the outcome of the story. The writer has shown that human passions are the same on whatever stage they may be displayed. A loyal love ennobles the youthful lives of the lovers Ivan and Motrya; super-

stitious fear makes a coward of the well-born Mikhail, and vindictive hate recoils upon the head of the crafty priest.

The Healers. By Maarten Maartens.

Toronto: The Copp, Clark Co. Cloth, \$1.25.

The Dutch novelist has entered on a new field in his latest work, and has introduced the reader to the company of doctors and to the study of disease. The interest centres around an idiot boy, who is an English baronet and the owner of great estates. The hero, son of an eminent Dutch bacteriologist, undertakes the task of curing the boy. Ultimately he attains a measure of success. There are a large number of secondary characters in the story, each one of whom is skilfully portrayed. The touch throughout is light and amusing.

Giant Circumstance. By John Oxenham. Toronto: The Copp, Clark Co. Cloth, \$1.50.

Oxenham has woven material for at least three stories into this book. The hero is depicted at various times as a soldier in Egypt, a philanthropist in London, and a lover in the Highlands. Despite its somewhat disjointed character, the book contains elements of greatness. Its tone is healthy. The lesson which it teaches of the ultimate blessings that follow misfortune is helpful, and the various characters that we meet are nearly all lovable.

The Scarlet Empire. By David M.

Parry. Indianapolis: The Bobbs-Merrill Co. \$1.50.

A remarkable book in which the case Individualism versus Socialism is put with considerable ability. The reader is transported to an imaginary fabulous community, where the theories of Socialism are put into operation and worked out to their logical conclusions. The minutest details of life are placed under State

regulation, which is shown to be the natural sequence of the Federation of Labor, the fundamental axiom being: Might is right, or tyranny in its worst form. In this imaginary community cases of individual thought or leadership are regarded as a reversion to type, treated as insanity and punished as crime. The book is a strong arraignment of Socialism.

My Sword for Lafayette. By Max Pemberton. Toronto: The Copp, Clark Co. Cloth, \$1.50.

This is a stirring romance related in Pemberton's usual dashing style. Of plot there is very little. The reader is merely afforded glimpses into the life of Zaida Kay, a worthy American soldier, as he journeys from France to America with the Marquis de Lafayette, fights beside him in the War of Independence, and re-crosses the Atlantic to enter the thick of the French Revolution. True, there is a bright little love story that interweaves its course through the pages of the book, but in the main the tale is one of wars, stratagems and spoils.

The Corsican Lovers. By Charles Felton Pidgin. Toronto: The Copp, Clark Co. \$1.50.

A story of the Vendetta, the chief scenes of which are laid in Corsica. Two pairs of lovers divide the interest of the reader. They are befriended by a benevolent Italian countess, and an equally benevolent British admiral. A happy consummation is reached through the timely removal, under the working of the Vendetta, of all the villains, of whom there are a goodly number. The incidents are lively and the excitement often intense.

The Truth About Tolna. By Bertha Runkle. Toronto: The Musson Book Co., Limited. \$1.50.

A brilliant society novel in which the reader is introduced to members

of the smart set in New York. The central figure is a wonderful tenor opera singer about whom the gay world goes mad. The action is rapid, the conversations bright and racy, and the love affairs, of which there are several, after some misunderstandings finally adjust themselves to the satisfaction of everyone.

The High Toby. By H. B. Marriott Watson. Toronto: William Briggs. Cloth, \$1.25.

With all the daredevil bravado of the gentleman of the road, Dick Ryder comes galloping into this book and throughout its pages keeps the reader on pins and needles, as he thrusts himself into all sorts of hazardous corners. Dick had a soft heart for beauteous damsels in distress, and so many of the yarns he relates deal with his exploits on behalf of the fair sex, but he also ruffled it with Bloody Jeffries and other notables. The last story of Ryder's gruesome revenge on Timothy Grubbe is most realistically narrated.

Lady Baltimore. By Owen Wister. Toronto: The Macmillan Co. \$1.50.

A delightful book. With rare felicity of expression the author has produced a picture of the grace and chivalry which characterized colonial life as it was before the reconstruction of the south. An old world atmosphere pervades the story, rendering the invasion of the modern spirit of wealth, commercialism and vul-

garity not simply incongruous but almost a desecration. In many of the situations there is much of pathos flavored by a gentle humor which gives a charm to a book one closes with regret.

The Financier. By Harris Burland. New York: G. W. Dillingham Co. \$1.50.

A novel of the strongly sensational type. John Gramphorn, the financier, is dominated by an ambition which stops at nothing to attain its ends. In his case Imperialism is the ignis fatuus which lures him on to deeds of horror and finally leaves him with aims achieved but love wanting—a lonely man. The book is a commentary on some of the colonizing methods adopted by civilized nations, and as such is well worth reading.

The Spoilers. By Rex E. Beach. Toronto: Poole Publishing Company. Cloth, \$1.50.

This is the kind of yarn that grips the reader's mind from the very start, even though many of its incidents are utterly impossible. It is an Alaskan story, showing how in the early days at home, unscrupulous men by prostituting the bench, contrived to jump the claims of the miners. The hero is a stalwart young man, who heads the opposition to the claim jumpers. The heroine is the daughter of the servile judge, used unconsciously as a tool by the grafters. There is plenty of incident from start to finish.

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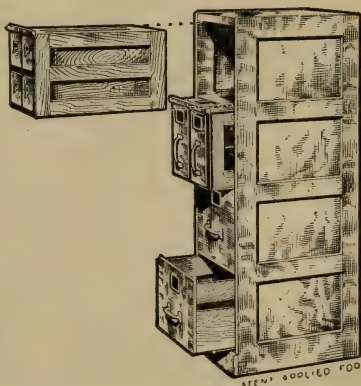
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JOSEPH BUZAGLO,

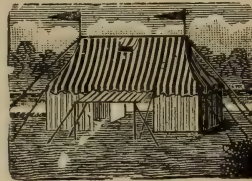
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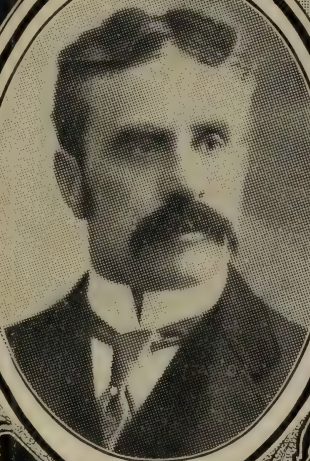


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